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Solvency Assessment of a Given Company

Hodnocení zadluženosti vybrané společnosti

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2. Description of the Financial Analysis Methodology
3. Assessment of Financial Situation
4. Solvency Assessment
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The declaration

“Herewith I declare that I elaborated the entire thesis, including all annexes, independently”

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Contents

1. Introduction

In today's rapidly developing society, debt operation and management has become a popular tendency. In this economic context, company's solvency ability has been more and more focused by managers, creditors and investors. Thus, doing solvency analysis has become necessary for every enterprise. Through analysis, we can know whether an enterprise has ability to repay its debts and examine ability to continue operating and know the risks they may face. It is an indispensable work for a company's continuous operation.

The aim of the thesis is to analyze financial condition of SAIC Motor, solvency ability in particular. Through this solvency evaluation processes, we can know the solvency behavior about this company during recent years.

Five main parts obeying an order from theory to practice constitute the structure of this thesis. In this chapter 1, we will introduce what's our thesis about briefly and show the aim and structure of our thesis.

In chapter 2, we introduce the theoretical part of our thesis. At first, we show three kinds of financial reports which consist of balance sheet, income statement and cash flow statement. And we describe their functions and basic structures in detail as base of later analysis. Then we turn to common-size analysis which is a method of comparing the changes of selected benchmarks and getting the basic financial condition and development trend. And we can analyze from two aspects: vertical common-size and horizontal common-size. At last, we introduce two solvency analysis methods. They are solvency ratio analysis and pyramidal decomposition analysis. The first method focuses on value of ratios. It compares practical values with recommended values to assess the solvency behavior of a company. The second method focuses on finding which component ratios have influences on basic ratio and then we can control them to get ideal solvency value.

In chapter 3, we firstly describe some basic information about SAIC Motor which includes its status in the market, history and heritage, culture of the corporation, products and services, and newest tendencies and highlights. Then we combine the real financial data of SAIC Motor during period 2011-2015with certain financial analysis methods to evaluate financial position.

In chapter 4, we focus on the solvency ability of the company. We use solvency ratio

analysis to analyze debt ratio, debt to equity ratio and interest coverage emphatically. Through comparing with recommended values, we can know the real solvency of SAIC Motor. In the end, we will use pyramidal decomposition to decompose interest coverage to know which factors need our attention.

In chapter 5, we summarize what we have found about the SAIC Motor and give a conclusion about the solvency position of the company. In addition, we recommend what it should do in the future to improve its behavior.

2. Description of the Financial Analysis Methodology

In this chapter, we introduce theoretical methods about financial analysis to explain the fundamental definition and correct usage of these methods. This chapter is a basis to subsequent analysis of selected company. The main three methods are common-size analysis, financial ratios analysis and pyramidal decomposition.

2.1Financial Analysis

Financial analysis is a process which is based on financial and accounting reports, and other relevant information, selecting useful financial information related to business decision-making, using a serious of specialized techniques and methods to analyze and evaluate the profitability, solvency and operating capacity of company' economic activities(financing、investment、operating) in the past and present according to collected dates. The last but not the least, these financial results can show us the true financial performance of the company and provide some suggestions about the future developments.

An effective financial analysis must include the following four interrelated steps. First, we should determine the economic characteristics of the particular industry in which the company located in. For various industries, we always use different criteria to assess its financial position. Second, we should understand and purify the financial statements of enterprises. As we all know, there is a big difference between the purpose of financial statements preparation and purpose of financial analysis. So it is crucial that the original financial statements should be adjusted and modified for the convenience of financial analysis. Third, we can use many scientific methods to analyze and evaluate the financial health of the company. And the most important is that the financial results should be compared with industry characteristic, business strategy or plan, recommended values, even the macroeconomic environment. At last, the financial results can give us a general situation about the health of the company. Then it can be regarded as predicted materials about the company' development trend in the future and can give us some recommendations based on the strengths and weaknesses.

The goals of financial analysis can be summarized in two aspects. On the one hand, it is able to evaluate past performance and measure present financial situation, thus we can know what stage the company is at. What is more, according to observation of previous financial

data, we can find some problems and do some strategic adjustments. On the other hand, to some extent, these financial reports can be seen as a database which helps us to predict the general development trend of the enterprise and give us some valued ideas. The ultimate goal of financial analysis is to provide a reliable basis for financial users when they make decisions.

Methods of financial analysis can be divided into three groups: common-size analysis which includes vertical analysis and horizontal analysis; financial ratios analysis; pyramidal decompositions and influence quantification. And in this part, we will clarify how to use these financial techniques in detail.

2.2Financial Statement

Financial statement is periodic structure statements of the financial position, operating results and cash flow of the enterprise. For investors, it provides information about the profitability capacity and dividend policy to facilitate them to make the right investment decision. For creditors, it provides information about the capital structure and asset status to them to make right credit decision. For financial managers, it evaluates the performance of the company and provides the basis for the decision-making and management of future production and operation of enterprise. For other interested outside parties, it also provides many useful information about the company they want to realize.

There are three basic financial statements which provide financial information about the company: balance sheet; income statement (profit/loss statement); cash flow statement.

2.2.1Balance Sheet

Balance sheet is a kind of financial statements that reveals the financial condition (assets, liabilities and shareholders' equity) of a company at a specific point of time.

In the following figure, balance sheet can be divided into two blocks. On the left, it show us what the company own or how this company use its capital. On the right, it can be composed of two sub-blocks. The one is liability which represents these capital is lent from creditors and must be paid back in the end. The other one is shareholder's equity which represents capital belonging to owners of the company. In one word, the right part tells us how the assets are financed or how the company raises the money it needs. Thus logic reveals that after the

company uses credit financing and equity financing to get money, it will transfer this amount into assets for daily operations. So there is a formula we conclude:

$$A = E + L. \tag{2.1}$$

In this formula, it should be explained that "A" represents asset, "E" represents shareholders' equity and "L" represents liability. It is obvious that assets are equal to liabilities surplus shareholders' equity. Here we put a standardized balance sheet below and show a clear structure of this kind of statement.

Table2.1 An example of balance sheet

BALANCE SHEET		
Item		Item
TOTAL ASSETS		**TOTAL EQUITY+LIABILITIES**
Long-term assets		**Equity**
Tangible assets		Share capital(par value)
Intangible assets		Contributed capital(excess par value)
Financial investments		Retained earnings
Other long-term assets		
Current assets		**Liabilities**
Inventories		Short-term borrowings
Accounts receivable		Long-term debt
Marketable securities		Accounts payable
Other short-term assets		Notes payable
Cash and cash equivalents		Accrued expenses

Source: Dluhosova (2014, p51)

As we can see in the Table2.1, Assets can be divided into long-term assets or we can call them as fixed assets. Fixed assets are held by an enterprise for the purpose of producing and operating, which have been used for more than 12 months and have a certain standard value. And it has three categorizations generally. The first one is tangible assets, such as equipment, land, etc. The second one is intangible assets, such as goodwill, patent, etc. The last one is financial investments, such as shares or bonds of other companies. The opposite one is current

assets which has relatively shorter life. Current assets are held normally for daily productions and operations. It includes inventories, accounts receivables, cash and cash equivalents, etc.

On the other side of the table, liabilities and shareholder's equity represent the claim right to the enterprise. In other word, the right part tells us how this company raises its money. The most important is that liability and equity show us two basic channels of a company to finance.

Liability is a kind of capital that has been borrowed from creditors and must been paid back after a certain period of time. In addition, it also can be divided into two sub-categories. Short-term liability must be repaid back within 12 months and is used to finance daily operations. Long-term liability has a longer repayment period, usually more than one year. Therefore, for enterprises, long-term debt is a stable source of funds. And it is used to purchase machinery and equipment and other long-term assets and expand reproduction.

Equity refers to the residual interests enjoyed by the owner after deducting liability from asset. And it represents partial ownership of company for investors. One of the biggest distinctions is that these contributions of owners do not need to be repaid back. It has three categories: share capital, contributed capital and retained earnings.

2.2.2 Income Statement

Income statement is a kind of dynamic financial statements which is used to reflect profit or loss of a company over a specific accounting period. It compares sales revenue, cost of sales, operating expenses, financial income and expenses and tax status for some period. In one word, this statement reflects the operation results and assesses the performance of the company.

We must grasp the essential logic relationships between various elements in the income statement at first. Meanwhile, we also should know how to calculate earnings after tax (net income) according to the given formula. Here is a underlying formula about the income statement as follows:

$$\text{Revenues} - \text{Cost (Expenses)} = \text{Net income/loss.} \tag{2.2}$$

Next, we put a standardized income statement below and show a clear structure of this kind of statement and explain the logic relationships between each item and the calculation process

of net income.

Table2.2 An example of income statement

Symbol	Item
NS	+Net revenue
C	-Costs of goods sold
C_o	-Other operating costs (sales, marketing, administrative, etc.)
OI	=**Operating income**
R_f	+Financial revenues
C_f	=Financial costs
FI	=**Pre-tax income**
t	-Income tax
NI	=**Net income**

Source: Dluhosova (2014, p54)

Net revenue is earned from daily sale and service, and then the corresponding cost which is directly associated with product should be deducted. The residual is gross profit. Next, operating expenses are subtracted, such as marketing and selling expenses, administrative expenses and etc. This kind of expense is always not associated with product andmust be spent in the whole production. Up to here, we get the first important concept which is Operating income or EBIT (earnings before interest and tax) briefly. All of above are called operating activities.

Then if we should consider debt financing, which can be called financial activities. Next step is that we need to take EBIT as a basis. EBIT surplus financial revenues which are in the form of interest received, coupon and dividend received and minus financial costs which are in the form of interest paid and coupon paid. The result is pre-tax income or we can call it earnings before tax (EBT).All of above are called financial activities.

The last step is that pay the taxes to government. EBT is multiplied by tax rate, and then we get the final net profit-earnings after taxes (EAT).This amount of money belong to the company' equity holders. And EAT has two distributed methods. One is reinvested in the company to reproduce or expand production scale. The other one, normally for those big companies, is to pay for their shareholder in the form of dividends.

2.2.3 Cash flow Statement

Cash flow statement is one of the three basic reports of the financial statements that represent changes in the cash position of an enterprise over a certain period. (Usually monthly or quarterly) The characteristic of the cash flow statement is that it indicates the condition of cash inflows and cash outflows and can be divided into three parts to analyze.

First, we introduce a simplified table standing on the category of cash flow activities to show to record cash flow during a year.

Table2.3 A recording method of cash flow activities

Cash and cash equivalents at the beginning of the year
+/- CF from operating activities
+/- CF from investing activities
+/- CF from financing activities
Cash and cash equivalents at the end of the year

It is obvious that there are three key components in the cash flow statement if we analyze it from nature of activities. First is operating activity which is related with daily business of the enterprise. For example, the company sells its products and services. And then it receives cash immediately or collects receivables later. We call it cash inflows. Outflows are in the form of corresponding operation expenses, such as materials, salaries and electricity fees. Second is investing activity which can be concluded briefly in buying and selling long-term assets. For instance, they can be tangible assets, intangible assets and financial investments. Third is investing activity which is referring to purchase and sell of capital. The cash inflows and outflows are formed in the case of company ‘capital change. When an enterprise issues shares and bonds or borrow long-term debts form others, cash flourish into this enterprise. Similarly, when an enterprise pays dividends and repays bonds and borrowings, cash outflow from this enterprise.

We must notice that cash flow statement is not the same with income statement. Income statement is calculated on the accrual basis. This means that if the company sells its products, it should record as revenues theoretically, regardless the money have been received. And if we want get cash flow statement from income statement. We can take net income as a basis and

do some adjustments. Concrete steps can be seen in the Table2.4.

Table2.4 Indirect format of the cash flow

Symbol	Item
EAT	+Net income
DEP	+Depreciation
Δ_{inv}	-Net inventories
Δ_{rec}	-Net accounts receivable
Δ_{pay}	+Net accounts payable
$\mathbf{CF_{oper}}$	=Cash flow from operating activities
Δ_{INV}	-Net investments
$\mathbf{CF_{inv}}$	=cash flow from investing activities
Δ_{B}	+Net borrowings
Δ_{RE}	+Net retained earnings
DIV	Dividends
EA	+Net sale of stock
$\mathbf{CF_{fin}}$	=cash flow from financing activities
$\mathbf{CF_{total}}$	=Net cash flow=$\mathrm{CF_{oper}} + \mathrm{CF_{fin}} + \mathrm{CF_{inv}}$

Source: Dluhosova (2014, p57)

2.3 Common-size analysis

Common-size analysis is a method of comparing some selected figures of financial statements of one company with previous or future time periods or financial statements of different companies. It is necessary to use this method in some circumstances as follows: Maybe there are two companies A and B. The amounts of asset of A are huge during recent three years from the surface. Meantime, B has a relative low level of assets during these years. If we compare these row numbers between them, it is obviously that A is a victor. But if we observe changes over the time of these companies and compare them, we will get an opposite results.

So we can know that common-size analysis takes evolution over a period of a company as

focus, and then get real condition and development trend. And this method can be divided into horizontal analysis and vertical analysis. These two subcategories are described below.

2.3.1 Horizontal common-size analysis

Horizontal common-size analysis focuses on the changes of financial statements data during a period to find increase or decrease of some selected indicator. It can be a time point of view to measure evolutions of a company's financial position and give an objective evaluation. And it can be compared by two forms which are shown in the following equations (2.3), (2.4):

$$\text{Absolute change}=U_t - \mathrm{U_{t-1}} = \Delta \mathrm{U_t}, \tag{2.3}$$

$$\text{Development of item}=\frac{\mathrm{U_t}}{\mathrm{U_{t-1}}}, \tag{2.4}$$

where $\mathrm{U_t}$ is the value, t is the current period and t-1 is the prior period.

Here, we can create some tables to do a practical calculation of using horizontal common-size analysis method. Table2.5 tells us the original data which list amount of liability in 2015 and 2016. Then Table2.6 shows the compared results by using horizontal common-size analysis method. We use amount of 2016 minus amount of 2015 to get an absolute change value. Meanwhile, we compare difference amount between 2015 and 2016 with amount of 2015 to get a relative change value.

Table2.5 An original table

Item	2015	2016
Total liabilities	1000	1500
Long-term liabilities	700	900
Short-term liabilities	300	600

In the above table, we assume that total liabilities in 2015 are 1000 dollars, and total liabilities in 2016 increase to 1500 dollars. Among liabilities of year 2015, 700 dollars belong to long-term liabilities and 300 dollars belong to short-term liabilities. Among liabilities of year 2016, 900 dollars belong to long-term liabilities and 600 dollars belong to short-term liabilities.

Table2.6 The calculation result by horizontal common-size analysis

Item	2015-2016	
	Absolute	Development of items
Total liabilities	+500	150%
Long-term liabilities	+200	128.6%
Short-term liabilities	+300	200%

In this table, we use two methods to calculate the changes of liability in the horizontal of time. By absolute analysis, liabilities increase by 500 dollars. By another method, comparing with year 2015, the liabilities of year 2016 increase relatively 150%. The analysis for long-term and short-term liabilities is same.

2.3.2 Vertical common-size analysis

Vertical common-size analysis focuses on the compositions of some selected benchmarks. Through the analysis of compositions' changes, we can master the financial status of the enterprise and improve strategy of development. In a word, this method is an in-depth analysis of the financial structure of company. And the general formula (2.5) is as follows:

$$\text{Proportion}=\frac{U_i}{\sum U_i}, \tag{2.5}$$

where U_i is the value of a given item and $\sum U_i$ is the base.

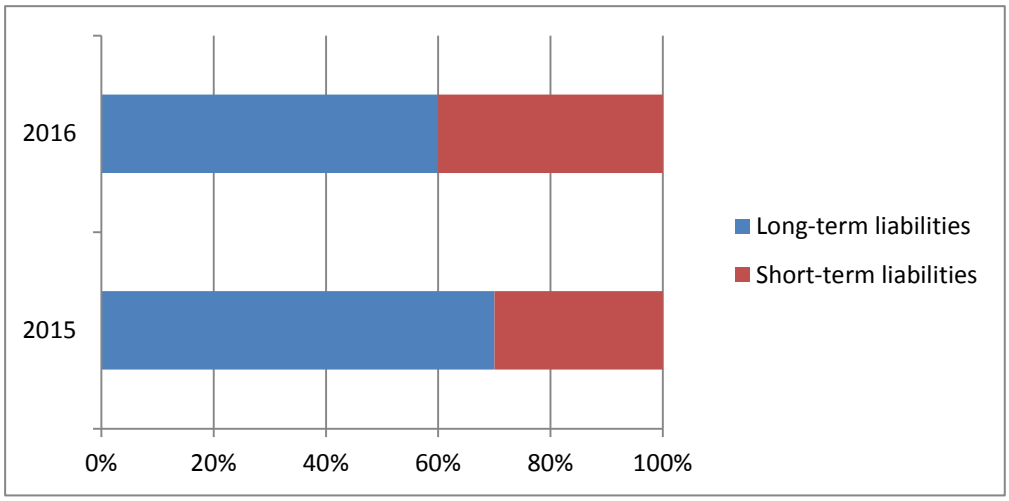
Here, we can create a table to do a practical calculation of using vertical common-size analysis method. Table2.7 tells us the original data list amount of liability in 2015 and 2016. Then Table2.6 shows the compared results by using horizontal common-size analysis method.

Table2.7 An original table

Liabilities	2015	2016
Total liabilities	1000	1500
Long-term liabilities	700	900
Short-term liabilities	300	600

It has the same meaning as Table2.6, so we will not explain it again.

Chart2.1 The calculation result by vertical common-size analysis



The upper bar shows what proportions of short-term and long-term liabilities in total liabilities in 2016. The low bar shows what proportions of short-term and long term liabilities in total liabilities in 2015. By this method, we can know the internal structure of some items and compare their constitution changes in horizontal of time.

2.4 Financial ratio analysis

Financial ratio analysis is a rational financial analysis method which transfers financial data into financial ratios, analyze these indicators' changes or compare the results with recommended values and give an effective evaluation.

There are many advantages when we use this technique. First, it is able to eliminate the impact of scale to compare the returns and risks between different enterprises, thereby helping investors and creditors to make the right decisions. Second, when we measure aspects of a company, financial ratio analysis always give us several standard financial indicators. It is necessary to use them because these existing ratios are experienced with numerous scientific practices and can help us successfully assess a company.

There are some primary financial ratios: profitability ratios, liquidity ratios, solvency ratios and asset management ratios. We will describe in detail in the following thesis.

2.4.1 Profitability ratios

Profitability ratios measure the ability of a company to generate profit from existing capital. When we want to realize a company' profitability capacity, we do not have to scan various raw numbers. Instead, we can observe and analyze some crucial ratios and get reliable results.

In general, the higher the profitability ratios, the better financial condition of the company. However, if the ratio becomes lower, it doesn't mean the company must have a terrible behavior. Ratio is a result of the comparison of denominator and numerator. So we should compare the changes of both items and get reasonable results. Here are some commonly used ratios.

Operating profit margin tell you how well a company 'operations contribute to its profitability. It is an indicator that measures the efficiency of company 'operation, reflecting the ability to obtain profits through operation in the case of considering costs and expenses associated with business operations. The higher the margin is, the stronger the operation ability is of the company.

To calculate: a company 'operating profit margin equals operating income or we can call it earnings before interest and tax divides revenues. All the data we need can be found in income statement. The formula (2.6) for operating profit margin is as follows:

$$\mathrm{OPM}=\frac{\mathrm{EBIT}}{\mathrm{Rev}}. \tag{2.6}$$

In this formula, it should be explained that "OPM" represents operating profit margin, "EBIT" represents earnings before interest and tax and "Rev" represents revenue.

Net profit margin measures the percentage of net income of an entity to its total revenues. It represents the proportion of sales that is left over after all relevant expenses (operating expenses, interest expenses, taxes and preferred stock dividends from revenues) have been adjusted and show how much of each dollar collected by a company as revenue translates into profit. It is obviously that we expect net profit margin is high, this represents this company' net profit accounts for a high proportion of earnings.

To calculate: a company' net profit margin equals net profit or we can call it earnings after tax divides revenues. All the data we need can be found in income statement. The formula (2.7) for net profit margin is as follows:

$$\mathrm{NPM}=\frac{\mathrm{EAT}}{\mathrm{Rev}}. \tag{2.7}$$

In this formula, it should be explained that "NPM" represents net profit margin, "EAT" represents earnings after tax and "Rev" represents revenue.

Return on assets shows how profitable a company is relative to its assets. It measures that

how efficient a company 'management is at using its assets to generate earnings. So if this ratio is high enough, it tells us this company gains benefits from invested capital successfully. We need to note that this ratio for public can vary substantially and will be highly dependent on the industry. This is why when we evaluate return on assets of a company, and we'd better compare it against previous numbers or companies in same industry.

To calculate: a company' return on assets equals earnings before interest and tax (EBIT) or operating income (OP) divides Asset. All the data we need can be found in balance sheet and income statement. The formula (2.8) for return on assets is as follows:

$$\mathrm{ROA}= \frac{\mathrm{EBIT(OP)}}{\mathrm{A}}. \tag{2.8}$$

In this formula, it should be explained that "ROA" represents return on asset, "EBIT (OP)" represents earnings before interest and tax or operating profit and "A" represents asset.

Return on equity measures returns of stock investors. This ratio tells us that how much profit a company can generate with the money shareholders have invested. The higher the percentage is, the higher the return on investment is**.** Like ROA, we need to compare this ratio in the same industry.

To calculate: a company' return on equity equals earnings after tax divides its invested equity. All the data we need can be found in balance sheet and income statement. The formula (2.9) for return on equity is as follows:

$$\mathrm{ROE}= \frac{\mathrm{EAT}}{\mathrm{Equity}}. \tag{2.9}$$

In this formula, it should be explained that "ROE" represents return on equity and "EAT" represents earnings after tax.

2.4.2 Liquidity ratios

Liquidity ratios measure the ability of a company to pay its immediate or short-term debt obligations. In other words, it compares the amounts of liquid assets and short-term liabilities. If a company has sufficient liquid assets relative to its short-term liabilities, we can conclude that this company has a high liquidity. As we all know that short-term debts are generally used for meeting the needs of daily production funds. So, which level we should maintain? Here we should introduce cash conversion cycle (CCC): time interval between receiving the payments for sold products and cash payments for purchasing resources for production. CCC

is a time interval which is shortage of funds result from payables prior receivables. So in this situation, additional sources of working capital which are in the form of short-term liabilities are needed to continue producing. Therefore, we can maintain a certain degree of liquid assets according to our short-term debts to adjust and get best liquidity ratios. Here are some commonly used ratios.

Current ratio measures the ability of a company to meet its current liabilities using current assets. In current ratio, current assets include that inventories, cash, accounts receivables and marketable securities. It should be more than 2:1. (Inventories may not be transferred into cash shortly.) To calculate: a company' current ratio equals current assets divides current liabilities. All the data we need can be found in balance sheet. The formula (2.10) for current ratio is as follows:

$$\text{Current ratio} = \frac{\text{current assets}}{\text{current liabilities}}. \tag{2.10}$$

Quick ratio measures the capacity of a company to meet its short-term debts using liquid assets which is closer to cash. In quick ratio, current assets include that cash, accounts receivables and marketable securities. It should be more than 1:1 (Even if half of the current assets cannot be converted in cash quickly, we can ensure that all the short-term liabilities will be repaid back.) To calculate: a company' quick ratio equals (current assets-inventories) divides current liabilities. All the data we need can be found in balance sheet. The formula (2.11) for quick ratio is as follows:

$$\text{Quick ratio} = \frac{\text{current assets} - \text{inventories}}{\text{current liabilities}}. \tag{2.11}$$

Cash ratio is the ratio which measures payment ability of a company, using its total cash and cash equivalents to meet its current liabilities. We regard current assets as cash, so this ratio is the most stringent standard for liquidity assessment. In cash ratio, current assets include that cash and marketable securities (sell take us only one day). To calculate: a company' cash ratio equals (cash+ marketable securities) divides current liabilities. All the data we need can be found in balance sheet. The formula (2.12) for cash ratio is as follows:

$$\text{Cash ratio} = \frac{\text{cash} + \text{marketable securities}}{\text{current liabilities}}. \tag{2.12}$$

In general, if liquidity ratios are high, it represents that the company has a strong ability to transfer assets into cash. So, the high liquidity ratios, indicating better short-term solvency

ability. However, different sectors of business have various natures and characteristics. So the requirements for the level of liquidity ratios are different. For example, compared with manufacturing industry, commercial retailers often need numerous liquid assets for investing in inventories. In addition, the company' business and financial management also play an important role in liquidity ratios.

2.4.3 Solvency ratios

Solvency ratios measure the ability of a company to pay off its long-term obligations to creditors and bondholders. And as previously description, long-term obligations consist of long-term borrowings (loans from banks or issue bond) and equity financing (issue shares). Therefore, from solvency ratios, we can realize how the company is financed.

The better solvency ratios indicate that this company has a good credit. If not, this company may default on its debt obligations. For creditors and investors, solvency ratios are watched closely by them. Because the ability of solvency related to their funds whether or not can be paid back. Therefore, to a large extent, the ability of solvency reflects the degree of business risk for a company. Here are some commonly used ratios.

Debt ratio shows a firm's total liabilities as a percentage of total assets. In other words, this ratio reflects the proportion of assets which are provided by creditors or how many assets are financed by debts. At the same time, it measures the risk level of providing funds to a company. A lower ratio is more favorable than a higher ratio. Because it represents that the existing liabilities is in a low level relatively. It is less risky for lenders.

To calculate: a company' debt ratio equals total debts divides total assets. All the data we need can be found in balance sheet. The formula (2.13) for debt ratio is as follows:

$$\text{Debt ratio} = \frac{\text{total debts}}{\text{total assets}}. \tag{2.13}$$

Nevertheless, various industries have their own benchmarks for debt level. 0.5 is a reasonable ratio. A debt ratio of 0.5 is always considered to be less risky. Because this means the company has twice as many assets as liabilities. Upon expiration, the company has enough assets to pay off all debt obligations. And if the debt ratio is 1, it means that the total debts equal total assets. So the company must sell its all assets to pay off liabilities. Obviously, it is a highly leverage firm and is very risky. When the companies borrow more money, the debt

ratio will increase. And due to creditors are always concerned about being repaid, they will no longer lend the money to companies. So the companies which have high debt ratio would better to look for equity financing to grow their business.

We must notice that different subjects have different requirements for debt ratio. From creditors' perspective, if the assets (capital) are provided by liabilities occupy a large proportion of total assets (capital), it means that creditors will bear main risks. In this situation, creditors are in a bad position. Therefore, creditors hope that debt ratio is as low as possible. From investors' perspective, they prefer high debt ratio. Because if assets of a company are financed mainly by debts, it means that capital is mainly in the form of bank loans. And this kind of capital is tax deductible. So if the company has more loans, the tax relief will exert huge effects to reduce the costs (in the form of taxes). The other reason is that if total assets are financed mainly by debts, investors can control this company with low capital (equity). From managers' perspective, they wish that debt ratio can keep a relative high level. Under controlling financial risks, through debt financing, expanding production scale, obtaining higher profits.

Debt to equity ratio is a financial leverage ratio which indicates structure of capital (assets). It tells us the ratio of total liabilities to shareholders' equity of a company. Both creditors and investors pay attention to this ratio, because it shows that a company 'operation preferences. Maybe it prefers debts financing for operation or it like using own equity.

To calculate: a company' debt to equity ratio equals total liabilities divides equity. All the data we need can be found in balance sheet. The formula (2.14) for debt to equity ratio is as follows:

$$\text{Debt to equity} = \frac{\text{total debt}}{\text{equity}}. \tag{2.14}$$

If debt to equity ratio equals 1, this represents that half of the company' assets are financed by debts and half are financed by equity. And if the ratio is higher than 1, this represents that major assets of this company are financed through debts. In this situation, debts burden of the company are heavy. And an increasing trend in debt to equity ratio is should be alarmed, because it means this company depends on debts for operations. Generally, lower values of debt to equity ratio are favorable, because it represents lower business risks.

Interest coverage measures how well a company's earnings before interest and taxes can cover its interest payments obligations. If the ratio is too high, we must realize that the company' management strategy is relative conservative. It should increase financial leverage to expand its operation scales. If the ratio is higher than 1, it represents that the company has capacity to pay off its interest payments. But if the ratio is lower than 1, it means that the profits generated by the company even not be able to pay its interests. In this situation, the default risk of the company is very high. The interest coverage is a useful indicator to assess the invested funds' safety in certain company. However, it also has some defect that is the value of the ratio is based on the current earnings and interest payments. So it primarily focuses on the short-term ability to pay off interests.

To calculate: a company' interest coverage ratio equals earnings before interest and taxes divides interest paid. All the data we need can be found in income statement. The formula (2.15) for interest coverage ratio is as follows:

$$\text{Interest coverage} = \frac{\text{EBIT}}{\text{Interest paid}}. \tag{2.15}$$

In this formula, it should be explained that "EBIT" represents earnings before interest and tax.

2.4.4 Activity ratios

Activity ratios measure the efficiency of a company uses its assets to generate revenues and cash. The operated asset of the company involves many areas, such as materials, inventories and receivables. So how well a company manages them to do more operation cycles and earn more profits become crucial. Therefore, activity ratios can be good indicators for observing company' management utilization.

Before we introduce some basic activity ratios, we need to understand operating cycle of company. First of all, we will use cash to buy materials as inputs, and then we enter production processes. After these two processes, the final products are completed with the total costs. (e.g. =50) Then we sell them to suppliers and receive cash immediately or credit receivables. (e.g. =60) Until now, the first operating cycle is done and we earn 10 in the end. Here are some commonly used ratios.

Average collection period shows how many days the accounts receivable can be converted

into cash. As we described above, revenues receive in two forms. When a company sells its products, it may receive cash or account receivables which always take some time transfer into cash. Certainly, we all look forward to getting cash. But we generally will sell on credits. And the proportion of account receivables to revenues decides the turnover ability of company. If this ratio is too high, it may results in lower liquidity. If an emergency occurs, the company may face operation turnover crisis. Therefore, low value of average collection period is favorable.

To calculate: a company' average collection period equals (accounts receivable divides revenue, then multiply dates (360). All the data we need can be found in balance sheet and income statement. The formula for average collection period (2.16) is as follows:

$$\text{ACP}=\frac{\text{Accounts receivable}}{\text{Revenues}}\cdot 360. \tag{2.16}$$

In this formula, it should be explained that "ACP" represents average collection period.

Inventory turnover indicates how many times a company can sell and replace its entire batch of inventories during a period. In other words it measures how fast a company is selling its inventories and is generally compared against industry averages. A high value of this number tells us that within a certain period, this company can sell a lot of shipments of goods and have a good operation. A low value of this number may results from two reasons. The first reason is that the demands for inventories are low. The other reason is that the average inventories we store in the warehouse are too much. In this situation, the inventories holding costs will increase and indicates a poor inventories management of this company.

To calculate: a company' inventory turnover equals costs of goods sold divides average inventory. All the data we need can be found in balance sheet and income statement. The formula (2.17) for inventory turnover is as follows:

$$\text{IT}=\frac{\text{costs of goods sold}}{\text{average inventory}}. \tag{2.17}$$

In this formula, it should be explained that "IT" represents inventory turnover.

Total assets turnover measures that the company' efficiency of developing its assets to generate revenues. This ratio represents that the value of benefits which are generated by per dollar of assets. Generally speaking, the higher the ratio is, the better this company performs. With the certain level of inputs (assets), the company with higher ratio can earn more profits.

But we must alarm that if this rising ratio is accompanied by the constant revenues, it indicates that maybe the enterprise scrapped a large number of fixed assets in the current period. In the same analyzed way, if a company' assets turnover ratio is always at a low level. We can process some useless assets to decrease the value of total assets to improve this ratio.

To calculate: a company' assets turnover equals revenues divides total assets. All the data we need can be found in balance sheet and income statement. The formula (2.18) for assets turnover is as follows:

$$\text{TAT} = \frac{\text{revenues}}{\text{total assets}}. \tag{2.18}$$

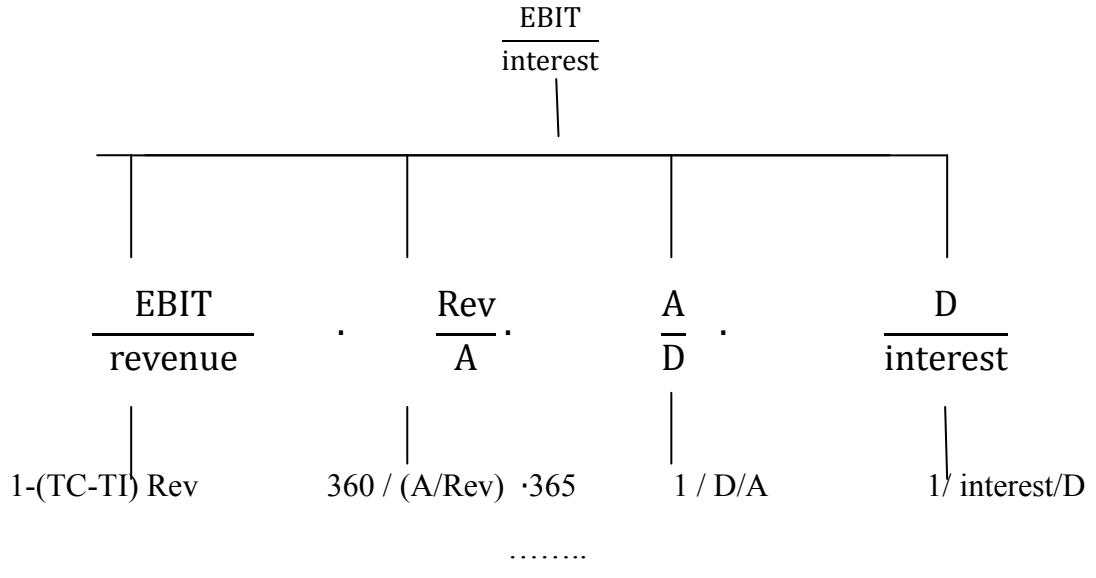
In this formula, it should be explained that "TAT" represents total assets turnover.

2.5 Pyramidal decomposition

Pyramidal decomposition is a kind of financial analysis techniques that decompose a basic ratio into many component ratios. This fundamental step is to get a logic structure that tells us which factors have impacts on the value of basic ratio. Then we can use influence quantification to analyze the impact of the changes in component ratios on the basic ratio and get sequence of factors. In the end, we can find that the factor which has the biggest impact and do some targeted improvements for the company.

In this thesis, we will focus on the solvency ability of a company. So we choose interest coverage ratio as a basic ratio to do a deep analysis. The figure (2.1) shows the pyramidal decomposition of this selected ratio.

Figure2.1 pyramidal decomposition of EBIT/interest



As we can see in the above figure, $\frac{\text{EBIT}}{\text{interest}}$ is the basic ratio which is on the top level. And the second level consists of four direct factors which drive the changes of the basic ratio' value. They are $(\frac{\text{EBIT}}{\text{Rev}})$;$\left(\frac{\text{Rev}}{\text{A}}\right)$; $(\frac{\text{A}}{\text{D}})$; $(\frac{\text{D}}{\text{interest}})$. And for the third level, there are many sub-factors have direct impacts on the second level' factors and indirect impacts on the basic ratio. For example, (TC-TI)·Rev exert influences on $\frac{\text{EBIT}}{\text{Rev}}$. Correspondingly, the change of $\frac{\text{EBIT}}{\text{Rev}}$ will influence the basic ratio $\frac{\text{EBIT}}{\text{interest}}$. In this way, we can analyze what drive the value of financial ratio and then do some targeted suggestions for the company to improve. And we will introduce some methods of influence quantification to help us assess the status of factors.

2.5.1 Method of gradual changes

This method works with absolute changes in component ratios. It analyze the change of basic ratio caused by absolute change of each component ratio with the static other ratios. It obeys a principle: Although we multiply absolute change of analyzed component ratio and other component ratios. But for the other component ratios, we have two options: One is period 0 (former) and the other is period 1 (later). So the principle tells us that if this component ratio has been analyzed already, we should take the value of period 1. And if this component ratio has not been analyzed, we should take the value of period 0. The formula (2.19) is showed as follows:

$$\begin{aligned} \Delta \mathrm{X}_{\mathrm{a1}} &= \Delta \mathrm{a}_1 \cdot \mathrm{a}_{2.0} \cdot \mathrm{a}_{3.0}, \\ \Delta \mathrm{X}_{\mathrm{a2}} &= \mathrm{a}_{1.1} \cdot \Delta \mathrm{a}_2 \cdot \mathrm{a}_{3.0}, \\ \Delta \mathrm{X}_{\mathrm{a3}} &= \mathrm{a}_{1.1} \cdot \mathrm{a}_{2.1} \cdot \Delta \mathrm{a}_3, \end{aligned} \tag{2.19}$$

where the symbol X means the basic ratio and the symbol ΔX means absolute change in the basic ratio, means component ratios, the symbol Δa means absolute change in the component ratios. In the end, the symbol $\Delta X a_1$ means absolute change in the basic ratio caused by change in the component ratio.

2.5.2 Integral decomposition method

By measuring the changes value of each component ratio in proportion of the basic ratio, we can know the impacts of component ratios on the basic ratio. The formula (2.20) is shown as follows:

$$\Delta X_{ai} = \frac{R_{ai}}{R_x} \cdot \Delta X, \tag{2.20}$$

where the symbolΔX_{ai} means absolute change in the basic ratio caused by the component ratio ai, the symbol R_{ai} means the relative change in component ratio,R_x means the total relative changes in basic ratio, andΔXmeans the total absolute changes in the basic ratio.

3. Assessment of Financial Situation

In this chapter, we firstly describe some basic information about SAIC Motor to show an outline about this company. Then we use common-size analysis to analyze the realistic financial position of SAIC Motor concretely.

3.1 Basic description about market position of SAIC Motor

SAIC Motor Corporation Limited (SAIC Motor) is the largest auto company on China's "A share market". The total share capital has reached 11 billion shares.

SAIC Motor's car sales achieve 5.902 million units in 2005, which has a 5 percent year on year growth. And it represents that it consolidates its leading position in the domestic auto market. In 2015, the company climbed 14 places to rank 46th on the annual Fortune Global 500 list, thanks to its 106.68 billion (units in dollar) in revenue. It's the twelfth times for SAIC Motor to appear on the list.

3.1.1 History of SAIC Motor

SAIC Motor was established in November 29, 2004. It was formerly known as Shanghai Auto Co., Ltd which was listed on Shanghai Stock Exchange in November 1997. Through reorganization in 2006, SAIC Motor has become the largest auto companies on "A share market" in China.

The development of SAIC Motor can date back to 20 century. In 1901, two Oldsmobile cars appeared in Shanghai. And it became the first city to use cars in China. Then in November 1995, manufacturing company of internal combustion engine parts set up, running auto parts of Shanghai. And this means that SAIC Motor starts. In September 28, 1958, the first Phoenix car was assembled successfully in Shanghai assembly factory, to achieve "zero" breakthrough in Shanghai auto manufacturing industry. Since 1978, SAIC grasp the chance of Reform and Opening, using foreign capital and introducing advanced technology. It is the pioneer of implementing joint venture strategy in China. For instance, SAIC Volkswagen Motor Co., Ltd was established in March 3, 1985.

In the 21st century and further future, SAIC Motor have new goals to conform to the times. In May 2009, SAIC determined to accelerate the construction of new energy vehicles and clear a goal of energy auto industrialization. Likewise, in March 2016, SAIC and Alibaba

Group held a meeting in Hangzhou which aimed at developing internet car.

3.1.2 Culture of the SAIC Motor

As we all know, corporate culture is the spiritual leader and core competitiveness of the corporation. It can make employees with cooperation and give the company vitality. In this aspect, SAIC Motor always does its best and gives a good feedback to the society. In the following text, I will show the corporate culture of SAIC Motor.

Vision: Build an innovative, globally recognized company that pioneers the automotive future.

Mission: Create values for our stakeholders through market-driven strategy, an outstanding workforce and continuous innovation of products and services.

Core Values: Integrity, Responsibility and Collaboration, Innovation, Enterprise and Aspiration.[1]

3.1.3 Products and services of SAIC Motor

At present, SAIC Motor' main businesses cover many fields which include OEM (passenger cars and commercial vehicles), components (engine, transmission, steering wheel, chassis, inside and outside decorations, electric equipment), auto finance and service business and so on.

OEM involves the research and development, production and sales of passenger cars and commercial vehicles. Their product can be divided into two categories: own brand and joint venture brand. For the own brand, there are ROEWE, MORRIS GARAGES, MAXUS and so on. For the joint venture brand, there are SAIC VOLKSWAGEN, SAIC-GM, SGMW, SUNWIN and so on.

Components business involves the research and development, production and sales of engine, transmission, steering wheel, chassis, electrical system and brake system. And there are various subsidiary corporations with professional knowledge. And we can focus on four major members of the SAIC Group. They are Shanghai Automobile Gear Works; United Automobile Electronic System Co., Ltd; SHANGHAI HUIZHONG; HUAYU Automobile System Co., Ltd. Among above companies, HUAYU Automobile System Co., Ltd owns a total of 28 direct investment enterprises which can be a good supporter for the development of

[1]Source:www.saicgroup.com

SAIC Motor in the components business part.

Auto service business has been an important supplementary part of automobile industry. Exception the physical car, this filed is committed to providing customers with excellent driving feelings. SAIC Motor, a leader of this field, has formed a diversified and comprehensive services system which involves nearly 20 categories of auto service. And it creates two core brands as the driving force of auto service business. As the first auto service brand of SAIC Motor, Anji has nearly 20 years of rich experiences and deep professional knowledge. The businesses of it cover lots of aspects related to “car life”. There are retail, leasing, maintenance, rescue services and automotive logistics. Anji is famous for its proven and perfect service network which is located across the globe. The other brand is Anyo which is one of the early brands focus on the field of professional customers. It is always regarded as perfect business partner who has advanced techniques and rich resources for automobile manufacturers. Anyo insists on serving the automobile industry chain, to develop an international leading brand.

Auto finance business is a necessary part for a company’ sustained development. On the basis of finance, company can expand potential customer group and raise the fund for the development of the corporation. Automobile finance business mainly includes auto finance, corporate finance, equity investment and insurance sales. Automobile finance provides dealers and consumers with financing services. Corporate finance is aimed at providing members of SAIC Motor with various services within the limits permitted by regulatory institutions. And there are many services such as capital deposit and loan, settlement, notes, foreign exchange and other agency services. Investment business covers the investments in the early stage of automobile industry chain, long-term equity investments of the automobile industry chain, short and medium-term investments outside the automobile industry and other short-term investments which are aimed at financial incomes. And for insurance sales, it includes accepting of commission of insurance companies, selling insurance products, charging premiums as an agency, doing loss surveys as an agency. There are several companies belong to this field of SAIC Motor. They are SAIC Finance, SAIC GMAC, and SAICCAPITAL, INSAIC and so on.

3.1.4 The latest highlights of SAIC Motor

In this part, we will pay attention to some updated news to realize how SAIC Motor to adjust various changes of the modern community. These can be seen as valuable references when we evaluate this corporate.

Firstly, SAIC Motor has determined a technical route of promoting the development of a series of products using hybrid power, fuel cell or pure electricity. SAIC invests 2 billion (CNY) to set up some advanced power companies to develop and manufacture automotive battery systems. In April 2012, SAIC' own brand—"E50" pure electric car and "Shanghai" fuel cell car attend the Hanover Industrial Fair. The annual report of year 2013 disclosure good news, that the company makes a new breakthrough in the industrialization of new energy vehicles. "Roewe550"will be produced within the year, and this means that the comprehensive performances of cars with new energy have reached a leading level in the domestic market.

Secondly, in March 2015, a wholly owned investment management subsidiary of SAIC Motor signs an agreement with Alibaba Group. The both sides will each invest about 500 million (CNY) to set up an Internet car fund which will boost the development of Internet car and the construction of platform.

Thirdly, on April 20, China Securities Regulatory Commission confirms the SAIC' application of issuing A shares by non-public offering. SAIC intends to issue no more than 964 million shares with no less than 15.56 (CNY) per share to invest many projects such as new energy vehicles, car networking and so on.

Last but not the least, on April 21, 2016, SAIC Motor publishes its annual report of year 2015. The group has earned total operating income of 670.448 billion (CNY) achieving a 6.42% year on year growth. Likewise, the group has earned net profit of 29.794 billion (CNY), achieving a 6.51% year on year growth. What is more, SAIC Motor decides to distribute dividend which reach14.995 billion (CNY). And this policy can be an attractive point for those potential investors.

3.2 Description of basic financial position of SACI Motor

In this subchapter, we will combine the real financial data of SAIC Motor from 2011 to

2015 with certain financial analysis methods to evaluate the fundamental financial position of the selected company. The aim of this part is to get a general financial status of SAIC Motor by using common-size analysis to analyze trend and structure of financial data and using financial ratio method to assess some financial benchmarks' condition.

3.2.1 Common-size analysis of SAIC Motor

In this part, we will use common-size analysis to know various financial items' changes over period (2011-2015) and then find the general trend of the company and even analyze the reasons about some significant fluctuations. The analysis will be divided into vertical common-sized analysis and horizontal common-sized analysis. The data we use are calculated through annual reports of SAIC Motor which are listed in Annex. It should be mentioned that SAIC-GM is transformed into a joint venture from subsidiary of SAIC Motor in2012.

3.2.1.1Horizontal common-size analysis

Horizontal common-size analysis is aimed at mastering the changes of selected items and finding general trend. We will analyze the financial reports from two perspectives. One is absolute change analysis which can help us to know the changes of a certain year compared to the standard year and realize general fluctuations. The other is a method which can compare five years' change ranges and find some change summits in the whole period. For convenience, we should make some rules and do some adjustments. First of all, a principle should be obeyed is that we always compare current period to the standard year (2011). Secondly, we use ten million as unit. Because the data in original annual reports is too large, so we do some adjustments without affecting the results of analysis. Then we can show the calculation results and analysis based on the annual reports of SAIC Motor during period 2011-2015.

Table3.1 Absolute changes compared to 2011 in balance sheet (Unit: CNY ten million)

	2012	2013	2014	2015
Current assets	-207.83	4095.15	4580.96	7869.77
Non-current assets	64.81	1405.61	5042.79	11429.98
Total assets	-143.02	5500.76	9623.75	19299.75
Current liabilities	-616.11	2382.69	3741.87	9515.50

Non-current liabilities	-715.91	256.49	693.60	2004.15
Total liabilities	-1332.02	2639.18	4435.47	11519.65
Shareholders' equity	1189.00	2861.58	5188.28	7780.10

From Table3.1, in the overall growing situation, 2012 is a year which needs our attention. It is the only year when almost all items in the balance sheet decrease. As I described at the beginning of this part, SAIC-GM is transformed into a joint venture from subsidiary of SAIC Motor in 2012. So, all the data about this company are subtracted in the annual reports. This is why many items decrease in 2012. And we must mention that 2012 is a depressed year for the whole car market. Under such circumstances, the production scale will be relatively small. Therefore, company don't need to borrow short-term liabilities to reproduce and can just keep a low level of working capital (current assets). It can explain decline of current liabilities and current assets. From year 2013, whole car market starts to revive. So we can find that there are continuous growths in items in balance sheet from 2013 to 2015. And we can find that shareholders 'equity grow year by year. This is a good tendency for development of a company. Because it indicates that equity financing becomes more and more important and default risks are decreasing. And it also represents that company earns more profits year by year.

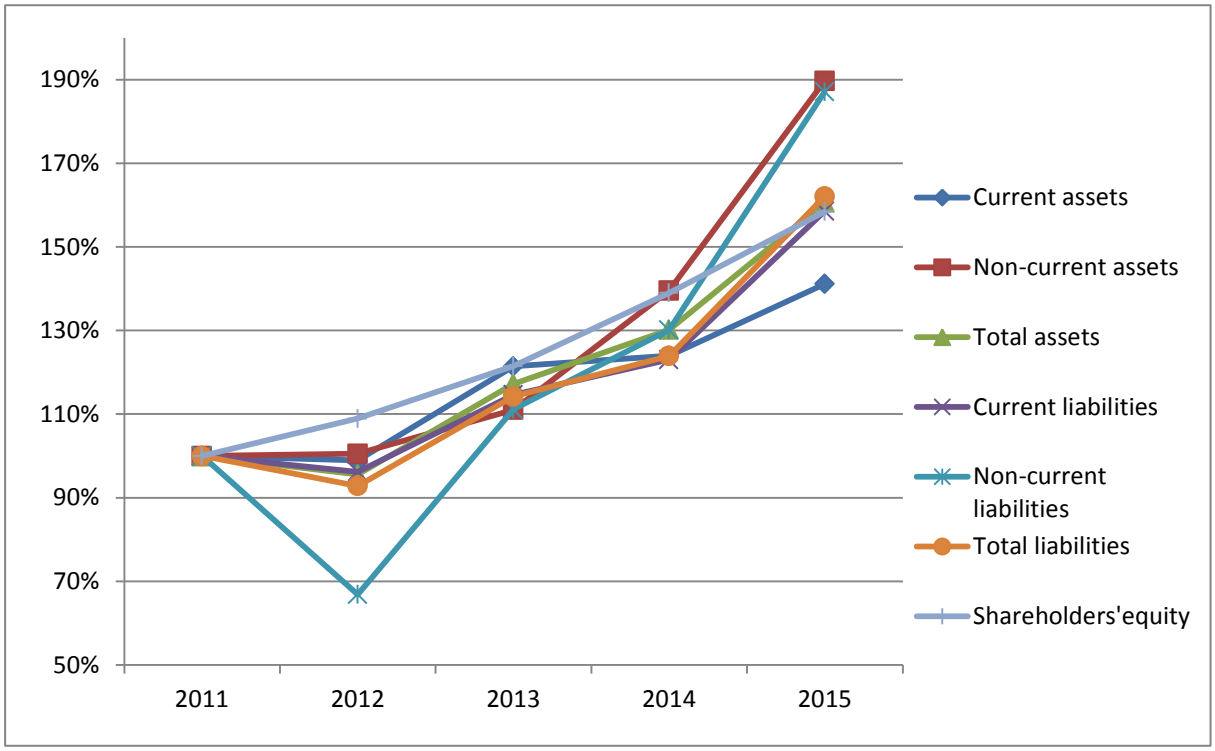
Table3.2 Development of items compared to 2011 in balance sheet (Unit :%)

	2011	2012	2013	2014	2015
Current assets	100%	98.91%	121.41%	123.95%	141.15%
Non-current assets	100%	100.51%	111.03%	139.58%	189.72%
Total assets	100%	99.55%	117.26%	130.20%	160.57%
Current liabilities	100%	96.21%	114.66%	123.03%	158.55%
Non-current liabilities	100%	66.88%	111.15%	130.15%	187.12%
Total liabilities	100%	92.82%	114.23%	123.91%	162.09%
Shareholders 'equity	100%	108.93%	121.50%	138.98%	158.45%

We regard the standard year 2011 as 100%. If the value of percentage is lower than 100%, this means the amount of this item in certain year is lower than the standard year and vice

versa. As we can see in the Table4.2, the percentage values are getting higher and higher which demonstrates that the company develops steadily. And we can find that the low percentages in 2012 indicate declines of capital (asset). This result is corresponded with what we analyze in the absolute change analysis. Meanwhile, it is easy to find that turning point occurred in year 2013. There are two reasons can explain this growth. First, whole car market enters into boom time which gives SAIC Motor confidence to expand production and earn more profits. Second, the production of Rowen550 designed by SAIC Motor opens the market and raise turnovers. We visualize horizontal common-size analysis of the balance sheet.

Figure3.1 Horizontal common-size analysis of the balance sheet



This is a comprehensive figure for horizontal common-size analysis of balance sheet. Different colors represent different items in the balance sheet. In the figure, we can see the downward and upward trend of each item and can see the degree of volatility of each item. It is obvious that non-current liabilities have an intense volatility. And almost all the items have tendency of going up, especially shareholders' equity. All of these represent that SAIC Motor is in a stage of rapid development.

Then in the same way, we will use horizontal common-size analysis to evaluate income statements from 2011 to 2015 of SAIC Motor. At first, we will observe absolute change of items in income statement. It should be mentioned that "EBIT" represents earnings before

interest and tax and “EBT” represents earnings before tax.

Table3.3 Absolute changes compared to 2011 in income statement (Unit: CNY ten million)

	2012	2013	2014	2015
Revenue	4401.65	12876.72	18971.40	22399.96
Cost	4754.62	13787.47	19403.29	23012.17
Gross profit	-352.97	-910.75	-431.89	-612.21
Expenses:	320.95	744.58	1795.05	2095.82
Selling expenses	435.74	1187.97	1722.30	1268.67
Administrative expenses	-58.11	-77.11	19.30	515.96
Other expenses	-56.68	-366.28	53.45	311.19
Income:	487.86	1592.58	2284.12	3087.92
EBIT	-186.07	-62.75	57.18	379.89
Interest expenses	1.11	-9.23	-8.89	1.74
EBT	-187.18	-53.52	66.06	378.15
Income tax	-41.04	-112.95	-260.05	-130.28
Net profit	-146.14	59.43	326.11	508.43

According to above table, we can find that the revenue is increasing all the time. This trend indicates that SAIC Motor is steadily occupying a majority of shares in the market and maintaining a leading position. And it is reasonable that cost also has a upward trend. Production is accompanied with cost. So the higher the revenue is, the higher the related cost is. When we turn to expenses, it also appears a continuous rising trend. And if we study the components of expenses, we will find selling expenses play a major role in this phenomenon. So company should take some measures to decrease this expense. But the good news is that income is increasing all the time during this period. This means that SACI Motor do well in other operation business, financial field and so on. And for interest expenses, there is a low fluctuation. So we can know that this company has relative low debt risk and is stable. The last item is net profit which appears a general rising trend. It is obvious that company’ profitability ability is gradually strengthened during this period. For SAIC Motor, we can expect that it will have better development in the following years.

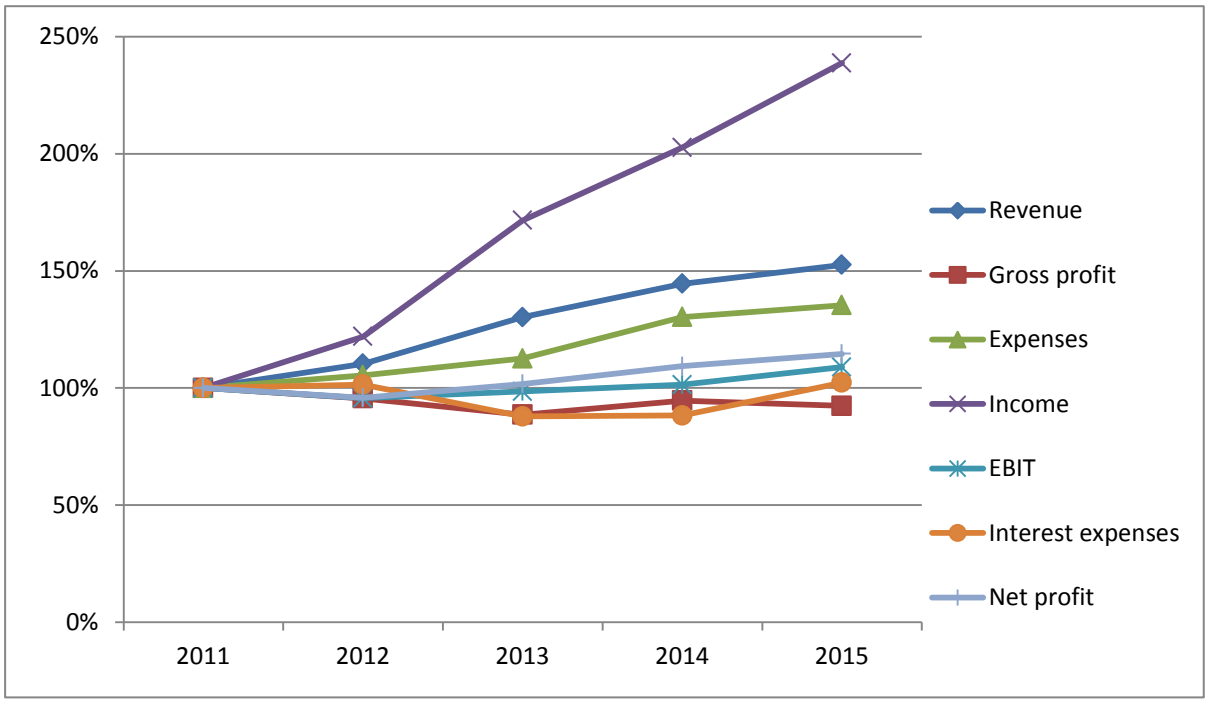
Table3.4 Developments of items compared to 2011 in income statement (Unit: %)

	2011	2012	2013	2014	2015
Revenue	100%	110.32%	130.20%	144.49%	152.54%
Cost	100%	113.72%	139.78%	155.98%	166.40%
Gross profit	100%	95.58%	88.59%	94.59%	92.33%
Expenses:	100%	105.42%	112.56%	130.29%	135.37%
Selling expenses	100%	119.07%	151.99%	175.37%	155.52%
Administrative expenses	100%	96.96%	95.97%	101.01%	126.99%
Other expenses	100%	96.72%	78.82%	103.09%	117.99%
Income:	100%	121.92%	171.57%	202.65%	238.77%
EBIT	100%	95.65%	98.53%	101.34%	108.88%
Interest expenses	100%	101.46%	87.82%	88.28%	102.29%
EBT	100%	95.55%	98.73%	101.57%	109.00%
Income tax	100%	94.17%	83.95%	63.05%	81.49%
Net profit	100%	95.82%	101.70%	109.32%	114.53%

We regard the standard year 2011 as 100%. If the value of percentage is lower than 100%, this means the amount of this item in certain year is lower than the standard year and vice versa. From the point of view of relative changes, it reflects same problems. The net profit of 2012 is the only year with a percentage less than 100% which results from depression of whole car industry. Then we can see a change in 2013. The percentage of net profit become higher than 100% and keep a rising tendency in the coming years which means that SACI Motor start expanding and earn more profits during this period.

Next, we visualize these changes in a figure to show clear tendency of items in the income statement.

Figure3.2 Horizontal common-size analysis of the income statement



This is a comprehensive figure of horizontal common-size analysis of the income statement. As we can see in the figure, the line represents revenue is upward, on the corresponding what we analyze before. Although revenue is increasing during this period, gross profit is decreasing. This is because the related cost of primary operation is increasing owing to innovation. Under a situation of declining gross profit and increasing expenses, EBIT still increase steadily during this period. This can be explained by the line of income with sharp increases. The increase of income fully covers the negative effects of gross profit and expenses. As for the line represents interest expenses which has low volatility. So we speculate that this company has relative low debt risk and is stable. In the last, the tendency of net profit is the same as what we analyze in the above paragraphs.

3.2.1.2Vertical common-size analysis

As we described in chapter 2, vertical common-size analysis is a kind of financial analysis which focuses on the compositions of some selected benchmarks. It analyzes changes of proportions in total amount. In a word, this method is an in-depth analysis of the financial structure of company. Here, we will use this method to analyze the composition structures of balance sheets and income statements during period 2011-2015.

First of all, we calculate proportion of sub-items in total items as table. Then, we use chart

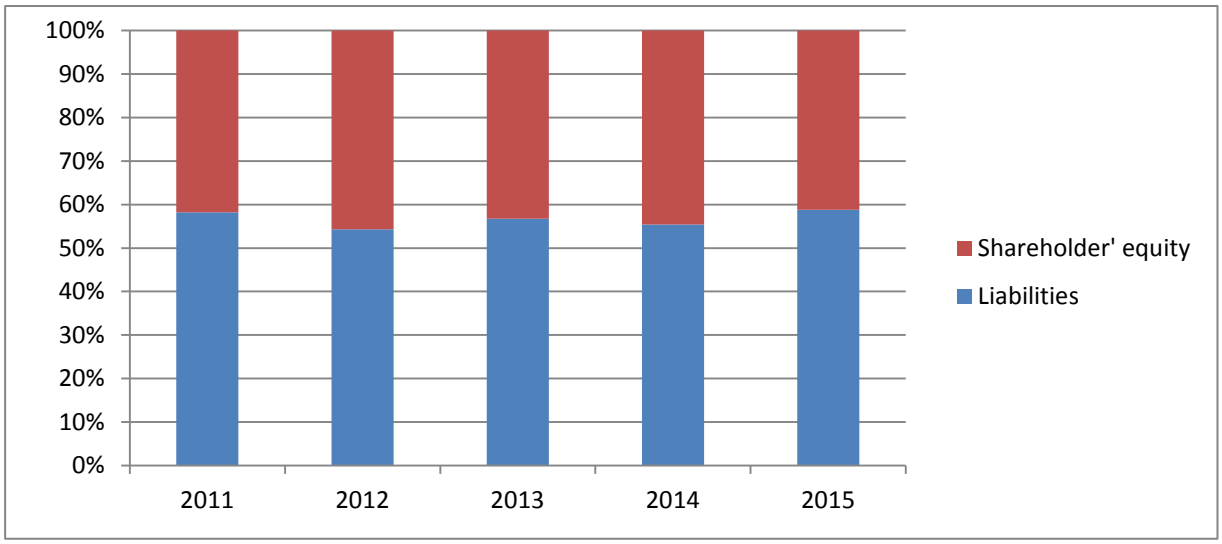
to show a clear result. Our calculated data are based on the annual reports of SAIC Motor from 2011 to 2015. At the beginning, we start with balance sheet.

Table3.5 The proportion of each item in total capital (Unit: %)

	2011	2012	2013	2014	2015
Liabilities	58.22	54.29	56.71	55.41	58.78
Shareholder' equity	41.78	45.71	43.29	44.59	41.22
Total liabilities and equity	100.00	100.00	100.00	100.00	100.00

From this table, we can know the financing structure of SAIC Motor. The first row shows a certain period. The second row represents the proportion of debt financing and the third row represents the proportion of equity financing. Then we will analyze these data in a chart as follows:

Chart3.1 Vertical common-size analysis in total capital



Observing above chart, what makes us secure is that financial situation is stable with low fluctuations during periods. And the ratio of debt financing and equity financing is also very good. And we must strengthen that both two financing methods have advantages and disadvantages. Generally, we hope that companies rely on equity financing. The reason is that companies don't have to pay the principal and interests. However, the more shares we issue, the weaker control power is to company of each shareholder. So it may increase the difficulty of management and decision-making. As for debt financing, the common problems is risk of paying back of debts. But the advantage is that debt financing will not generate control problem for company generally. Then we can turn to total assets and find some financial

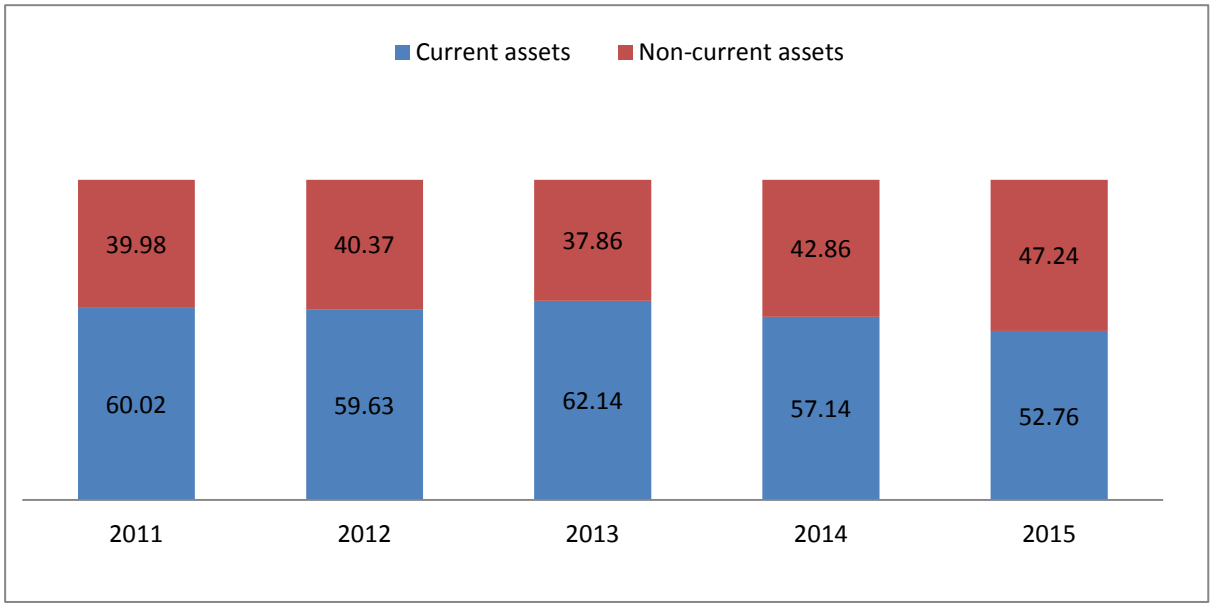
characteristics of SAIC Motor.

Table3.6 The proportion of each item in total assets (Unit :%)

	2011	2012	2013	2014	2015
Current assets	60.02	59.63	62.14	57.14	52.76
Non-current assets	39.98	40.37	37.86	42.86	47.24
Total assets	100.00	100.00	100.00	100.00	100.00

From this table, we can see how total assets are constituted. The first row shows a certain period. The second row shows us the proportion of current assets in total assets. The third row uses the same expression method to show the proportion of non-current assets in total assets. Then we will analyze these data in a chart as follows:

Chart3.2 Vertical common-size analysis of total assets



As we can see in the Table3.6 and Chart3.2, the proportion of current assets and non-current assets is relative stable which represents that SACI Motor operates smoothly. Meanwhile, we can find that the proportion of fixed assets continue to rise in small increments. The auto market has been recovering since 2012. So, company considers expanding production to occupy market shares. In this situation, SAIC Motor continues to purchase fixed assets such as factory, land and machinery to raise production rate. Especially in 2015, subsidiary—SAIC Finance purchased 5% shares of SAIC-GM Finance and all the data will be included in the annual statement of SAIC Motor in 2015. And we also can find

that current assets account for a large share of total assets which means that company has a relative high liquidity to pay debts and it is obvious a good signal.

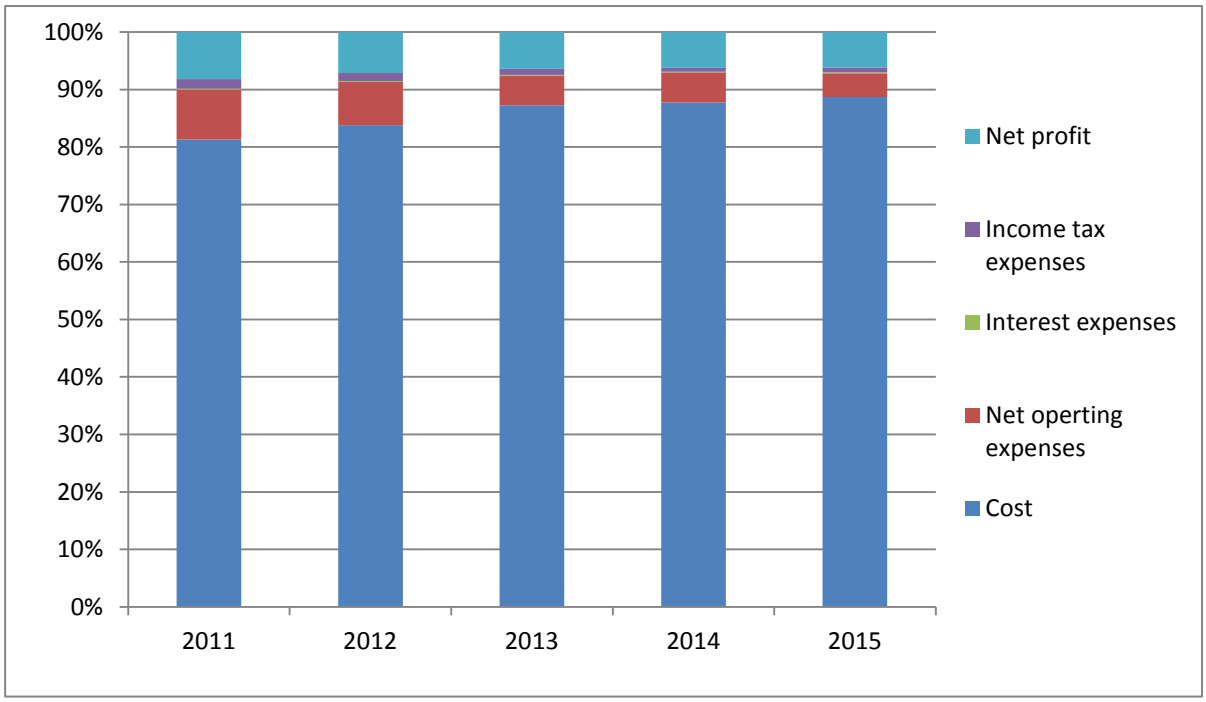
Then in the same way, we will use vertical common-size analysis to evaluate income statements from 2011 to 2015 of SAIC Motor.

Table3.7 The proportion of each item in the revenue (Unit :%)

	2011	2012	2013	2014	2015
Cost	81.29%	83.79%	87.27%	87.75%	88.67%
Net operating expenses	8.68%	7.51%	5.14%	5.21%	4.16%
Interest expenses	0.18%	0.16%	0.12%	0.11%	0.12%
Income tax expenses	1.65%	1.41%	1.06%	0.72%	0.88%
Net profit	8.21%	7.13%	6.41%	6.21%	6.16%
Revenue	100.00%	100%	100%	100%	100%

This table shows that how the revenue are distributed into each item of each year. The total amount of revenue are regarded as 100% and the percentages in items like cost, net operating expenses represent what proportion of revenue are divided into this item. Through this table, we can know the company's operation behavior clearly. Then we will analyze these data in a chart as follows:

Chart3.3 Vertical common-size analysis of the revenue



From above figures, we can find that revenue can be roughly composed of cost, net operating expenses, interest expenses, income tax expenses and net profit. Among them, costs occupy a large proportion accompanied with a rising trend. And there are some reasons to explain. First, car industry always accompanied with high manufacturing costs which can explain why costs are so high relative to other expenses. Second, research and development of new energy vehicles is in an initial stage with relative high production costs which can explain rising trend of costs. And the downward trend of interest expenses reflects company reduces debt financing which can lower the debt risks. Although the net profit are decreasing continuously during this period. We must point out that this is the results of company's research and development of new products.

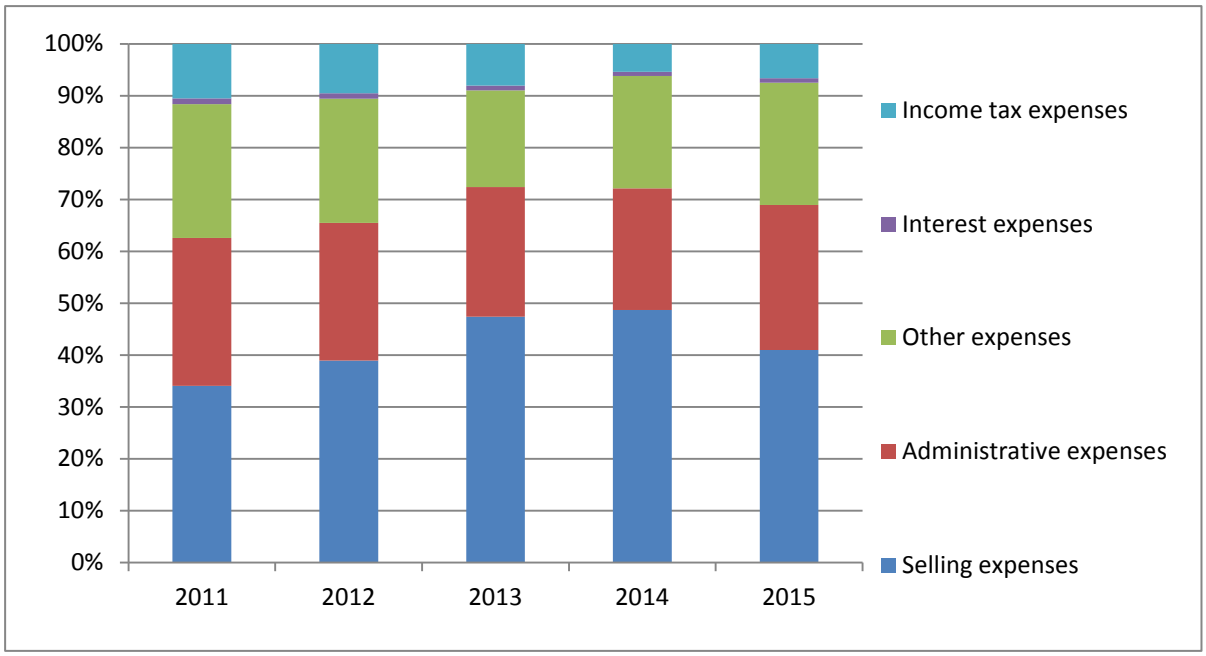
In the end of this part, we will analyze the composition of expenses and weights of detailed expenses. Then we pay attention to those with big weights or have unreasonable changes. Calculation results are shown in Table3.8.

Table3.8 the proportion of each item in expenses (Unit :%)

	2011	2012	2013	2014	2015
Selling expenses	34.08%	38.94%	47.39%	48.68%	40.98%
Administrative expenses	28.51%	26.53%	25.03%	23.46%	27.99%
Other expenses	25.79%	23.94%	18.60%	21.66%	23.53%
Interest expenses	1.13%	1.10%	0.91%	0.81%	0.89%
Income tax expenses	10.50%	9.49%	8.06%	5.39%	6.61%
Total expenses	100.00%	100.00%	100.00%	100.00%	100%

From this table, we find that there are various expenses like selling expenses, administrative expenses and so on. However, different expenses account for different weights in total expenses. In this table, it is easy to know that selling expenses is relatively the biggest spending for SAIC Motor. So maybe we should target this expense and control it. In addition, some violent volatility also needs our attention. Then we will analyze these data in a chart as follows:

Chart3.4 Vertical common-size analysis of expenses



It is easy to find that selling expenses account for the biggest proportion and administrative expenses and other expenses also occupy relative large shares. This is because cars are not necessities. So SACI Motor needs to spend a lot of money in advertising to attract more consumers. This is a industrial characteristic. The good thing is that the proportions of all these expenses maintain a stable level which indicates company' financial situation is stable and healthy.

3.2.2 Financial ratio analysis

As we described in chapter 2, there are four types of ratios to help us analyze a company's financial situation. But in this part, we will use three kinds of ratios except the solvency ratio. Because the aim of this part is show a general financial position of the selected company and core of this thesis is solvency ability which will be described in chapter 4.

In the following thesis, we calculate and evaluate profitability ratio, liquidity ratio and activity ratio in detail using data and diagrams. The concrete steps are: first of all, we will calculate every year's ratio during period 2011-2015 and then we are able to show and comment the trend in diagrams. All the calculation results are derived from annual reports of SAIC Motor from 2011 to 2015.

3.2.2.1 Profitability ratio

Profitability ratios measure the ability of a company to generate profit from existing capital.

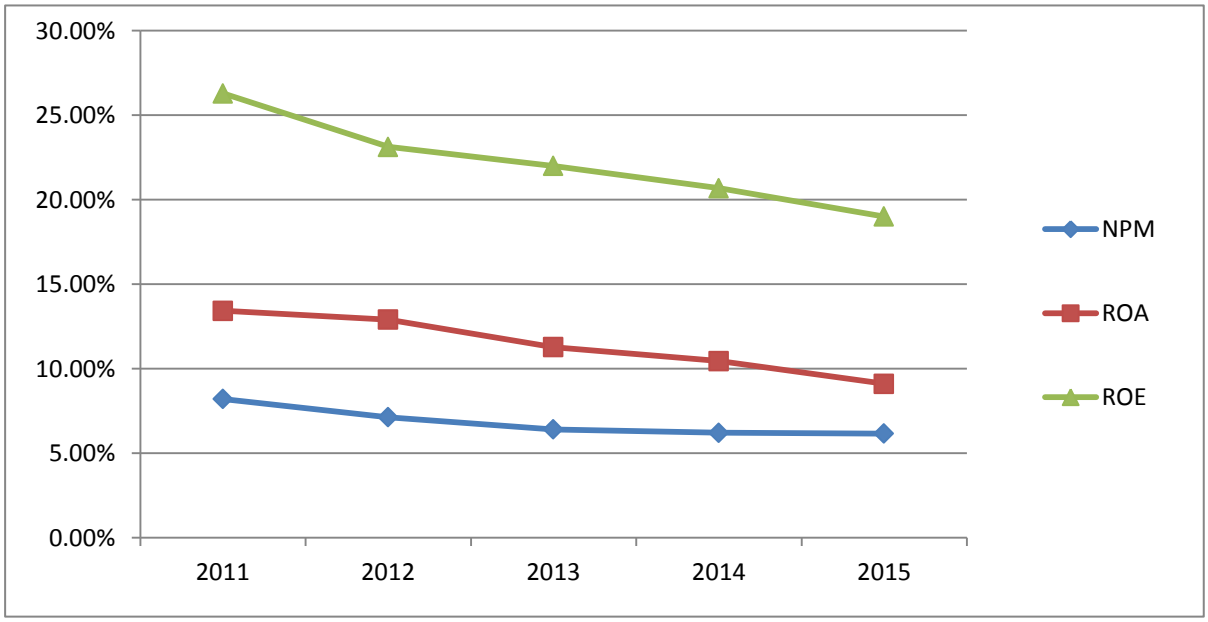
Theoretically, the higher the ratio is, the stronger the ability is. We always use some typical ratios to measure profitability ability of selected company. In this part, “net profit margin”, “return on asset” and “return on equity” are used. In the below paragraph, we calculate profitability ratios which are derived from the financial data in annual statements of SAIC Motor during period 2011-2015.

Table3.9 Profitability ratios of SAIC Motor during 2011-2015 (Unit :%)

	2011	2012	2013	2014	2015
NPM	8.21%	7.13%	6.41%	6.21%	6.16%
ROA	13.43%	12.90%	11.28%	10.45%	9.11%
ROE	26.29%	23.12%	22.00%	20.68%	19.00%

It should be firstly noticed that we simplify “net profit margin” as “NPM”; “return on asset” as “ROA”; “return on equity” as “ROE”. As we can see in the above table, although there is no huge volatility in ratios, the value of each ratio is decreasing year by year. In this situation, the profitability ability becomes weaker superficially. However, we should decompose this ratio and analyze changes of both numerator and denominator to know true reasons of these declines. Further analyses are shown in following paragraph combined with a clear trend figure.

Figure3.3 Profitability ratios of SAIC Motor during 2011-2015



Net profit margin (NPM) measures what proportion of revenue are turned into net profit. In

general, the higher ratio represents that most of revenue are converted into earnings. Although NPM is decreasing continuously, we find that, in table3.4, both revenue and net profit are increasing all the time. The key point is that the growth rate of revenue is greater than the growth rate of net profit. Consequently, the final result reveals a decline. To sum up, although the net profit of SAIC Motor is increasing, the growing pace of it cannot keep up with the revenue. So it is well worth improving the ability to earn more profit on the given revenue. As for the methods, the company can control costs and cut down expenses.

Return on asset (ROA) measures how efficient a company's management is at using its assets to generate earnings. In general, the higher ratio represents that the company effectively use the given capital to earn more profit. Although ROA is decreasing in the same way, we cannot comment that the profitability ability surely become weaker. By observing table3.2, we know that the decline of this ratio is resulted from rapid growth of assets. But it is impossible that the increased part is fully allocated in the fields which support operation. For example, the majority of assets are securities which are not used in operation. To sum up, although it seems that profitability of SAIC Motor become weaker, the net profit keeps a steady growing trend and thus it is not a very serious problem to the company.

Return on equity (ROE) measures returns of stock investors. This ratio tells us that how much profit a company can generate with the money shareholders have invested. Similarly, higher ratio is preferable. From Table.3.2 and Table3.4, we find that equity growing faster than net profit that is way this ratio fall. And other analysis is the same in the ROA.

3.2.2.2 Liquidity ratios

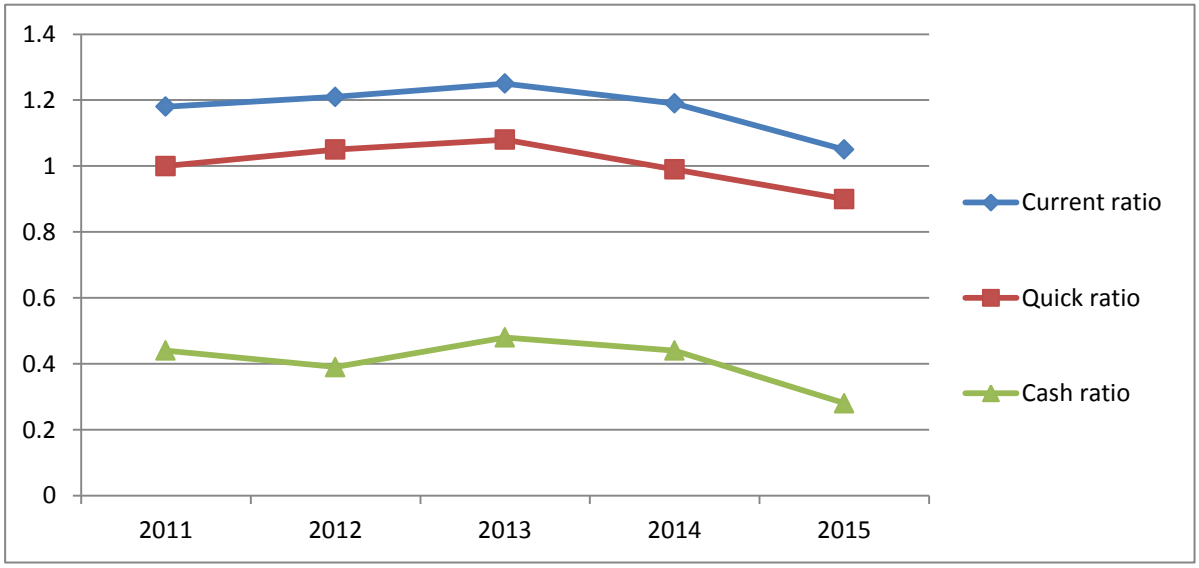
Liquidity ratios measure the ability of a company to pay its immediate or short-term debt obligations by using liquid assets. In general, higher ratio is preferable. Because it means that the company has enough liquid assets compared to its short debts and has low default risks. We always use some typical ratios to measure liquidity ability of selected company. In this part, "current ratio", "quick ratio" and "cash ratio" are used. In the below paragraph, we calculate liquidity ratios which are derived from the financial data in annual statements of SAIC Motor during period 2011-2015.

Table3.10 Liquidity ratios of SAIC Motor during 2011-2015 (Unit :%)

	2011	2012	2013	2014	2015
Current ratio	1.18	1.21	1.25	1.19	1.05
Quick ratio	1.00	1.05	1.08	0.99	0.90
Cash ratio	0.44	0.39	0.48	0.44	0.28

This table shows that three liquidity ratios' changes in the horizontal of five years. On the whole, the liquidity ability is qualified. For instance, the value of current ratio is always greater than 1 which means the amount of current assets is more than one time as the amount of debts. SAIC Motor has adequate liquid assets to pay off its short-term debts. Although values of quick ratio and cash ratio are lower than 1, they are qualified. The reason is that they are stricter standards of liquidity measurement. Further analyses are shown in following paragraph combined with a clear trend figure.

Figure3.4 Liquidity ratios of SAIC Motor during 2011-2015



In the above figure, three ratios reflect the same tendency which is that ratios rise during 2011-2013 and drop during 2014-2015. By observing above figure, we find that the value of current ratio is always greater than 1 and the values of quick ratio and cash ratio are also relatively high in the car industry. Since 2014, the ratio began to fall. Because the growth rate of current liabilities is higher than current assets. We conclude that although with a declining trend since 2013, the liquidity of SAIC Motor is in a good condition.

3.2.2.3 Activity ratios

Activity ratios measure the efficiency of a company uses its assets to do operation cycles and earn profits. We always use some typical ratios to measure operation ability of selected company. In this part, “inventory turnover”, “total assets turnover” and “average collection period” are used. In the below paragraph, we calculate activity ratios which are derived from the financial data in annual statements of SAIC Motor during period 2011-2015.

Table3.11 Activity ratios (IT; TAT) of SAIC Motor during 2011-2015

	2011	2012	2013	2014	2015
IT	11.85	15.80	15.67	15.48	15.48
TAT	1.34	1.48	1.49	1.49	1.27

It should be mentioned that “IT” represents “Inventory turnover” and “TAT” represents “Total assets turnover”. In the table, the value of IT is always stable at 15. This means that the products sold is 15 times as much as inventories. So, SAIC Motor has a very strong operation ability to turn inventory into products sold. The value of TAT is around at 1.4 which indicates that per dollar of assets can generate 1.4 dollar. This value is not very high in the car industry. So we comment that SAIC Motor should improve the ability on asset utilization of assets.

In the next table, we analyze operation ability of SAIC Motor during 2011-2015 from other angle.

Table3.12 Activity ratio (ACP) of SAIC Motor during 2011-2015

	2011	2012	2013	2014	2015
ACP	10.11	11.81	12.48	12.09	16.24

It should be mentioned that “ACP” represents “average collection period”. This ratio uses day as a standard to evaluate how long the company need to transfer accounts receivable into cash. It is obvious that the shorter the turnover days, the better the use of working capital. ACP in the table reveals that SAIC Motor only needs approximately 12 days to recover accounts receivable. In general, big companies always have power to require the receipt method when they sell their products. So, the account receivables are relatively less for SAIC Motor. No matter what, the operation ability of SAIC Motor is very strong.

4. Solvency Assessment

The chapter 4 is the core chapter of this thesis. We analyze the solvency ability of SAIC Motor using various methods. The first method is solvency ratio analysis and the second one is pyramidal decomposition.

4.1Solvency ratio analysis of SAIC Motor

As we describe in chapter 2, there are four types of ratios to help us analyze a company's financial situation. And in this thesis, we will focus on solvency ratios to get a report about SAIC Motor' solvency ability.

In the following thesis, we will evaluate debt to asset ratio, debt to equity ratio and interest coverage in detail using data and diagrams. First, we will calculate every year's ratio during period 2011-2015. Then we are able to show the trend in diagrams. All the calculation results are derived from annual reports of SAIC Motor from 2011 to 2015.

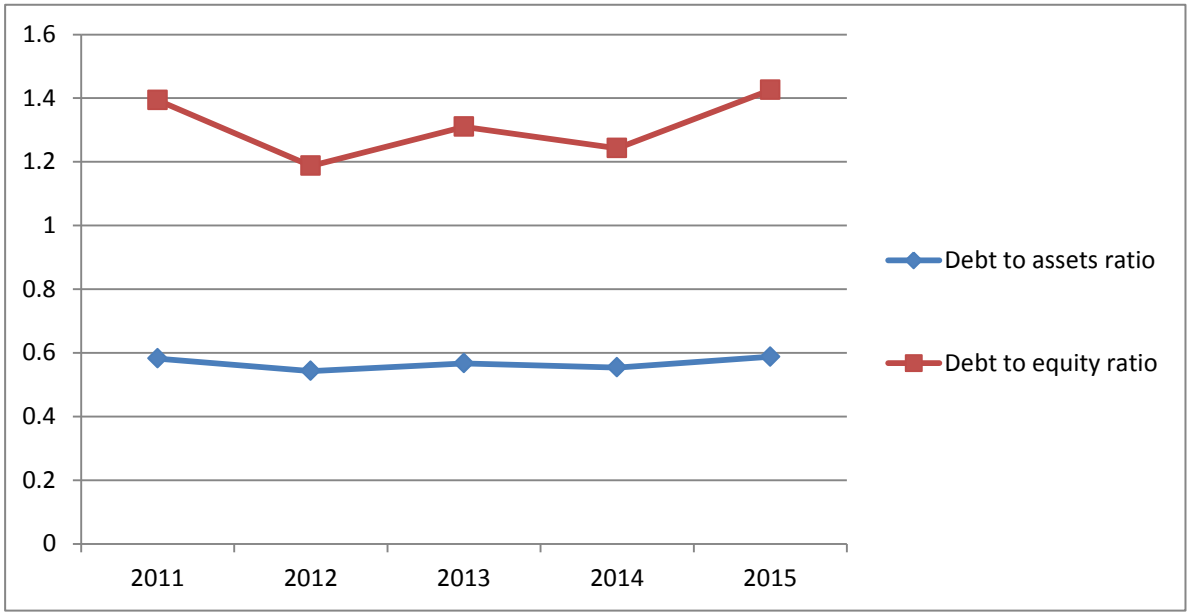
At first, we introduce debt to assets ratio and debt to equity ratio. Both of them reflect what proportions of assets are provided by debts and what proportion of assets are provided by equity. Both creditors and investors pay attention to these ratios, because they are able to show that a company' operation preferences---debt financing or equity financing. Here, we calculate these two ratios during period 2011-2015. All calculations are based on formula (2.13), (2.14) and results are shown in Table4.1

Table4.1 Solvency ratios (Debt to asset; Debt to equity) of SAIC Motor

	2011	2012	2013	2014	2015
Debt to assets ratio	0.5822	0.5429	0.5671	0.5541	0.5878
Debt to equity ratio	1.3936	1.1875	1.3102	1.2426	1.4257

From above table, our first feeling is that debt ratio is in a stable situation and maintains approximately at 0.55 levels during this period 2011-2015. Meanwhile, we observe that debt to equity ratio has been maintained at a level between 1.0 and 1.5 which indicates that capital structure of SACI Motor is relatively stable. On the whole, this table reflects that SAIC Motor use debt financing more often than equity financing. Further analyses are shown in following paragraph combined with a clear trend figure.

Figure4.1 Solvency ratios (Debt to asset; Debt to equity) of SAIC Motor



Debt to assets ratio: Theoretically, 0.5 is a good level for this ratio. Because this means the company has twice as many assets as liabilities to pay back debts. Therefore, we can conclude that SAIC Motor' solvency ability is strong and stable which can give creditor reasons to lend money again and attract and secure investors. Although lower level of this ratio is favorable in generally due to low payback risk, there is a one thing we need to notice. Sometimes, low level of this ratio is not a good thing. Because it represents that company don' t make full use of debt financing to raise capital, so as to achieve the purpose of expanding production and occupying market shares.

Then let's analyze debt ratio of SACI Motor during period 2011-2015 in detail. In 2011, the debt ratio is relatively high which indicates that company finances mainly by debts. As I explain earlier, whole car industry is in depression and investors are not confidence in this industry. Therefore, equity financing is difficult and debt equity is necessary. In 2012, the debt ratio suddenly drops from 0.5822 to 0.5429 which is a relatively lowest level during this period. This value means that the proportion of liabilities in total assets is reduced and equity financing is used more frequently. Because investors raise confidence in car industry and is willing to purchase shares owe to recovery. Then in the next three years, there are just little fluctuations for debt ratio and the reasons are similar as the former two years. So we don't discuss any more.

Debt to equity ratio: From above figures, we can observe that debt to equity ratio has been

maintained at a level between 1.0 and 1.5 which indicates that capital structure of SACI Motor is relatively stable. As for whether this level is healthy or not, we should know that this ratio is a sensitive index. If the value is too high, debt burden will be heavy for company. If the value is too low, it represents company has poor capital operation ability. If we stand on solvency ability, a relatively lower ratio is favorable. Because low value explains that the owner provides more capital than borrowed capital and the amount of debts are relatively low. Therefore, company' debt repayment pressure will be small. What's more, we should know that different countries and different industries have different evaluation standards. In US market, debt to equity ratio is at a level of 1:1 generally. As for Japanese market, this ratio is hoped to be 2:1. Until now, we can say that debt to equity ratio of SACI Motor is qualified in the actual situation.

Then let's analyze debt to equity ratio of SACI Motor during period 2011-2015 in detail. In 2011, debt to equity ratio is relative high in this period. This means that SAIC Motor mainly relies on borrowing money to raise capital compared to other years. The reason is easy, as I explain previously. Because during depression times, almost none investors want to buy shares of car companies. In this situation, debt financing become more important. In 2012, debt to equity ratio reaches the lowest value. This means debts fall relative to equity and equity rise relative to debts. In other word, the proportion of money which is raised through equity goes up. This is because that the market situation of year 2012 is opposite of year 2011. Active and prosperous car market attracts a lot of investors and equity financing becomes easy. Then in the next three years, although this ratio sometimes go up and sometimes go down. There are just little fluctuations for debt to equity ratio and the reasons are similar as the former two years. So we don't discuss any more. Later, we will observe another ratio's behavior to evaluate solvency ability of SACI Motor.

Secondly, we analyze interest coverage which measures how well a company's earnings before interest and taxes can cover its interest payments obligations. From perspective of profitability, this indicator examines whether company use its financing space maximally. Through the ratio of two aspects (earning and debt) to assess whether the company has enough profits to repay interests. This is a new idea of evaluating the solvency ability of selected company. If the ratio is too high, it means interest is too low compared to EBIT. In

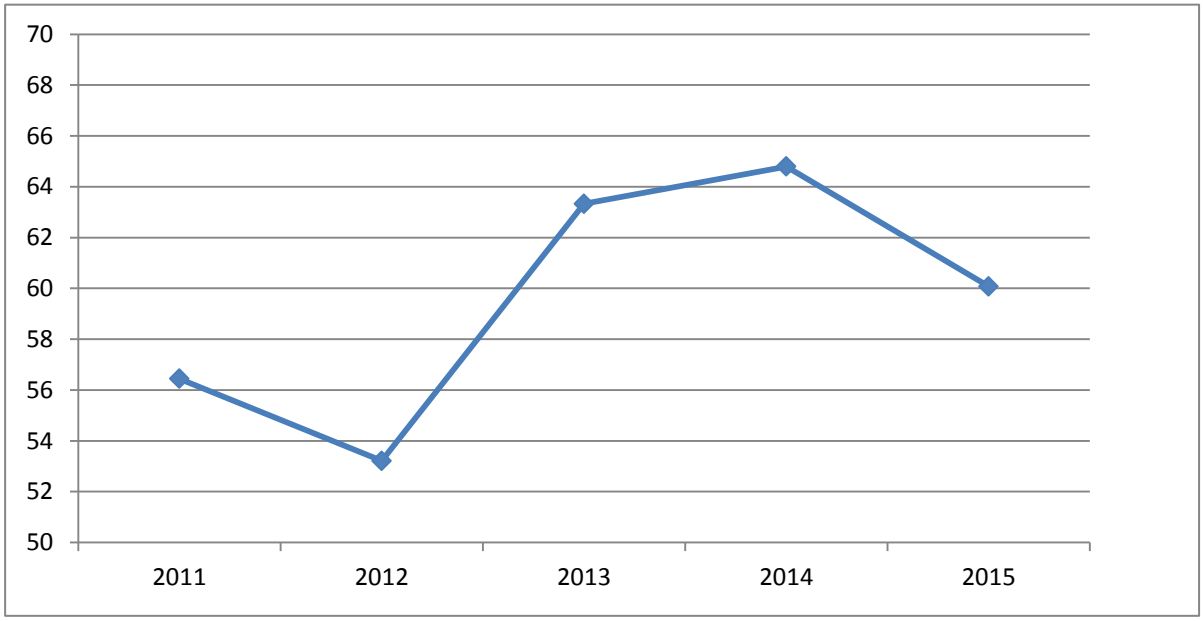
this situation, the company should be more aggressive and should borrow more money to expand production. Generally, we measure the value of indicator with 1. If ratio is higher than 1, it indicates that EBIT >interest. In this situation, company has enough profits to repay interest. If ratio is less than 1, it indicates that EBIT<interest. In this situation, company' solvency ability is poor. Here, we will calculate interest coverage during period 2011-2015. All calculations are based on formula (2.15) and results are shown in Table4.2.

Table4.2 Solvency ratios (Interest coverage) of SAIC Motor

	2011	2012	2013	2014	2015
Interest coverage	56.4436	53.2107	63.3285	64.7925	60.0789

In the above table, we can find that the value of this ratio is always at around 60 which mean that the company has adequate operating earnings to cover its interest paid. Further analyses are shown in following paragraph combined with a clear trend figure.

Figure4.2 Solvency ratios (Interest coverage) of SAIC Motor



From above figures, it is easy to find that the value of interest coverage is always far greater than 1. This means that the company has enough profits to repay interests and solvency ability is qualified. However, it is a matter of course that SAIC Motor' interest coverage is greater than 1 as an excellent car enterprise. So we should compare this ratio of SAIC Motor with other companies in the same industry to evaluate the real situation of solvency ability. Here, we list some a superior company' interest coverage (Volkswagen Group) in figure 4.21 to give a comparison. And we just list their interest coverage from 2011

to 2013. Because three years can roughly reflect the average level of interest coverage and give reference values.

Table4.3 Interest coverage of Volkswagen Group

	2011	2012	2013
Volkswagen Group	10.246	10.990	6.252

Source: financial statements of Volkswagen Group

After comparison, we find that value of interest coverage of SAIC Motor is the highest. Therefore, we can conclude that SAIC Motor's solvency ability is very strong if we use interest coverage as a standard. There is one reason can explain this result. We all know that the value of interest coverage of SAIC Motor is very high. It means that for a certain amount of interest, company has adequate EBIT to repay interests. However, SAIC Motor's market position is also confirming this inference. As a leading enterprise in car industry, SAIC Motor is always a sales champion and has a strong profitability. That is why interest is relatively very low to its EBIT and the value of interest coverage is so high.

4.2 Pyramidal decomposition analysis of SAIC Motor

Pyramidal decomposition is a kind of financial analysis techniques that decompose a basic ratio into many component ratios. Then we will combine with influence quantification to analyze the impact of the changes in component ratios on the basic ratio and get sequence of factors. In the end, we can find that which factors have affected company and do some targeted improvements for the company.

In this part, we will use pyramidal decomposition analysis to analyze SAIC Motor so as to recognize some valuable influencing factors. Then based on these factors, we are able to find where the problem is and make appropriate improvements for SACI Motor' better development. Generally, we can use this method to analyze any ratios of profitability, liquidity and activity. Here we will only decompose interest coverage as examples, owing to the theme of our thesis focuses on solvency ability. For the convenience of subsequent analysis, we will introduce our idea and steps.

There are four levels and a lot of items which are derived from the fourth floor in our decompositions. Theoretically, all changes of items must equal to change of the basic

ratio---interest coverage. So we do can list all items and rank them. But we must realize that there are more than 50 items and it is too complicated for us to show all items in one figure. In this situation, we will choose the fourth floor as final floor. And all the items in this floor will be regarded as component ratios. And we can use influence quantification to get results. As supplementary analysis, for those component ratios whose influences rank top three, we will decompose them. And items we neglect before will be used. We will list top three items which have affected top three component ratios. By this way, a comprehensive pyramidal decomposition of interest coverage is completed. Up to now, we can use this method to analyze SAIC Motor' interest coverage and get a report about solvency behavior during the period 2011-2015. In the end, we should refer that "TC/Rev" represents "Total cost/Revenue"; "TI/Rev" represents "Total income/Revenue"; "(L-TA/Rev)·365" represents "(Long-term asset/Revenue)·360; "(S-TA/Rev)·365" represents "(Short-term asset/Revenue)·360; "L-TD/A" represents "Long-term debt/Asset"; "S-TD/A" represents "Short-term debt/Asset"; "Interest/D" represents "Interest/Debt".

The results of every component ratios' influence on interest coverage during period 2011-2012 are shown in Table4.4 and Figure4.3.

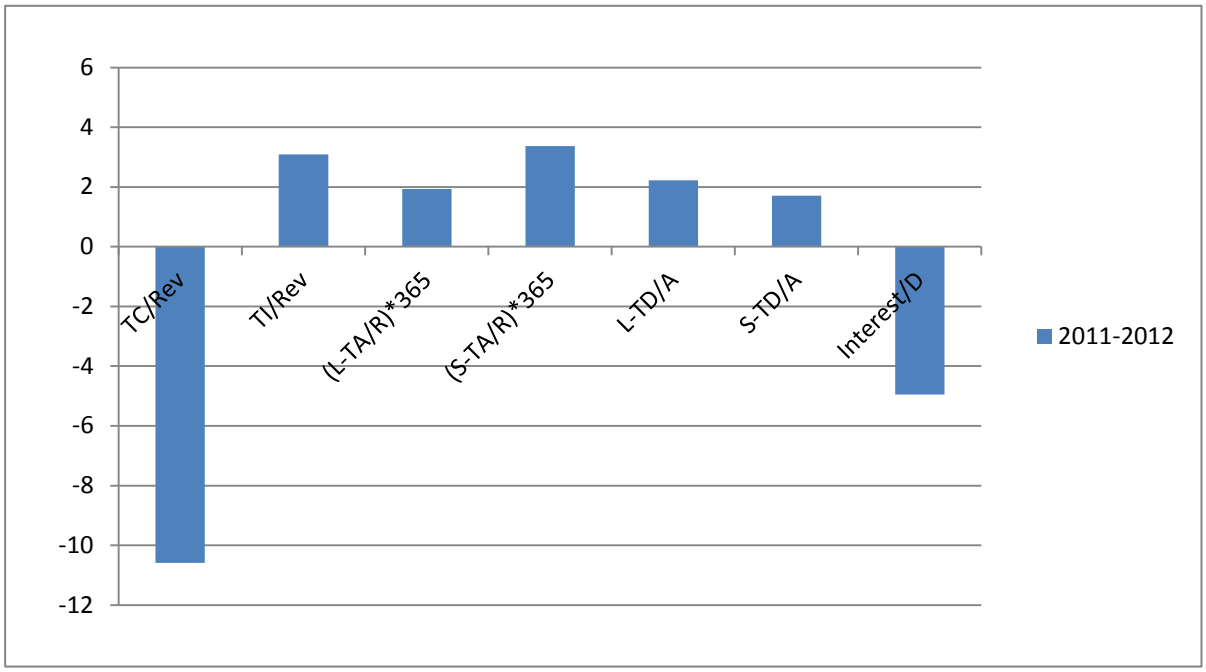
Table4.4 Pyramidal decomposition of interest coverage during 2011-2012

	Influence	Order	Influence(+,-)
TC/Rev	-10.5934	1	-
TI/Rev	3.0868	4	+
(L-TA/Rev)·365	1.9291	6	+
(S-TA/Rev)·365	3.3663	3	+
L-TD/A	2.2222	5	+
S-TD/A	1.7107	7	+
Interest/D	-4.9546	2	-
$\sum$ sum	-3.2329		

From above table, we know that the value of interest coverage drops by 3.2329. Through pyramidal decomposition, we find that this change is caused by these components ratios. They are TC/Rev, TI/Rev, (L-TA/Rev)·365, (S-TA/Rev)·365, L-TD/A, S-TD/A, Interest/D. It is

clear to see that TC/Rev has the strongest influence on interest coverage. The contribution to change of interest coverage is negative 10.5934. The second one is Interest/D. The contribution to change of interest coverage is negative 4.9546. The third one exerts a positive influence on interest coverage. It is (S-TA/Rev)·365 which has an influence of positive 3.3663.

Figure 4.3 Diagram analyses of influences (2011-2012)



From Figure4.3, we can find that although there are only two negative component ratios and five positive component ratios. The impacts of these two negative factors are very large. The negative influences brought by them even cover all positive influences brought by five factors. Thus, that's why the value of basic ratio decreases in 2012.

Through above analysis, we can get a conclusion. If SAIC Motor wants to increase the value of interest coverage and strength its solvency ability, they must control TC/Rev and Interest/D. If we make TC/Rev drop, negative effects on basic ratio will be reduced. And if we make Interest/D drop, negative effects on basic ratio will also be reduced. Therefore, SAIC Motor can focus on these two aspects and do some improvements.

For further analysis, we find the items which have influences on top three component ratios to explore deeper reasons for the change of basic ratio. It should be explained that Interest/D has no further items.

Talbe4.5 Items which have influences on component ratio---TC/Rev

	Influence	Order	Influence(+,-)
Primary operation/Revenue	-14.0707	1	-
Business taxes and levies/Revenue	5.0462	2	+
Administrative expenses/Revenue	3.0545	3	+

In Table4.5, we find that the changes in TC/Rev are mainly caused by three further items. They are Primary operation/Rev, Business taxes and levies/Rev and Administrative expense/Rev.

Table4.6 Items which have influences on component ratio---(S-TA/Rev)·365

	Influence	Order	Influence(+,-)
Notes receivable/Revenue·365	2.9855	1	+
Cash and bank balance/Revenue·365	2.8944	2	+
Inventories/Revenue·365	1.1303	3	+

In Table4.6, we find that changes in (S-TA/Rev)·365 are mainly caused by three further items. They are Notes receivable/Rev · 365, Cash and bank balance/Rev · 365 and Inventories/Rev·365.

The results of every component ratios' influence on interest coverage during period 2012-2013 are shown in Table4.7 and Figure4.4

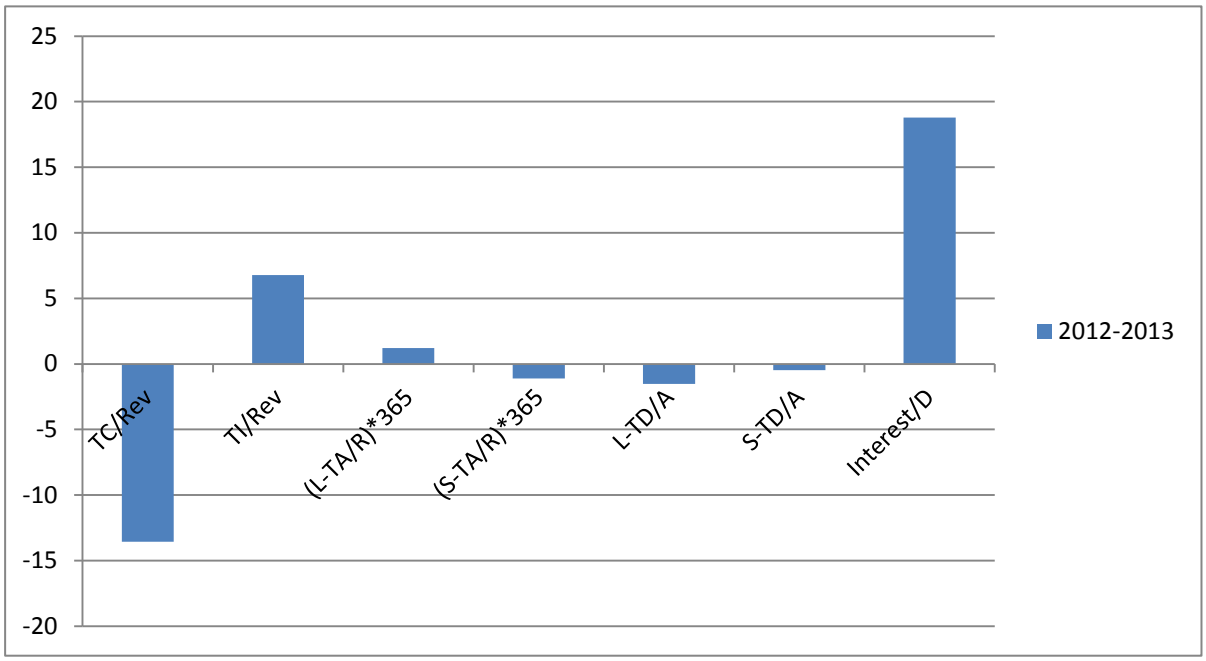
Table 4.7 Pyramidal decomposition of interest coverage during 2012-2013

	Influence	Order	Influence
TC/Rev	-13.5503	2	-
TI/Rev	6.7856	3	+
(L-TA/Rev)·365	1.2011	5	+
(S-TA/Rev)·365	-1.1125	6	-
L-TD/A	-1.5163	4	-
S-TD/A	-0.4764	7	-
Interest/D	18.7866	1	+
$\sum$ sum	10.1178		

From Table4.7, we know that the value of interest coverage increases by 10.1178. Through

pyramidal decomposition, we find that this change is caused by these components ratios. They are TC/Rev, TI/Rev, (L-TA/Rev)·365, (S-TA/Rev)·365, L-TD/A, S-TD/A, Interest/D. It is easy to find that Interest/D has the strongest influence on interest coverage. The contribution to change of interest coverage is positive 18.7866. The second one is TC/Rev which has a negative effect. The influence is negative 13.5503. The last one is TI/Rev which has a contribution of positive 6.7856.

Figure4.4 Diagram analyses of influences (2012-2013)



From Figure4.4, we can find that although the number of negative factors and positive factors is almost the same. There are two positive factors whose influences on the basic ratio can rank top three. Thus, component ratios exert positive influences on interest coverage in general. Through above analysis, we can get a conclusion. If company wants to maintain this good trend, they must keep TI/Rev and Interest/D at their current levels. Therefore, SAIC Motor should focus on these two aspects and do some improvements.

For further analysis, we find the items which have influences on top three component ratios to explore deeper reasons for the change of basic ratio. It should be explained that Interest/D has no further items.

Table4.8 Items which have influences on component ratio---TC/Rev

	Influence	Order	Influence(+,-)
Primary operation/Revenue	-21.2828	1	-
Business taxed and levies/Revenue	6.5802	2	+
Administrative expenses/Revenue	3.8883	3	+

In Table4.8, we find that changes in TC/Rev are mainly caused by three further items. They are Primary operation/Rev, Business taxed and levies/Rev and Administrative expenses/Rev.

Table4.9 Items which have influences on component ratio---TI/Rev

	Influence	Order	Influence(+,-)
Investment income/Revenue	7.9842	1	+
Other operation/Revenue	-1.4166	2	-
Non-operating income/Revenue	0.8406	3	+

In Table4.9, we find that changes in TI/Rev are mainly caused by three further items. They are Invest income/Revenue, Other operation/Revenue and Non-operating income/Revenue.

The results of every component ratios' influence on interest coverage during period 2013-2014 are shown in Table4.10 and Figure4.5.

Table4.10 Pyramidal decomposition of interest coverage during 2013-2014

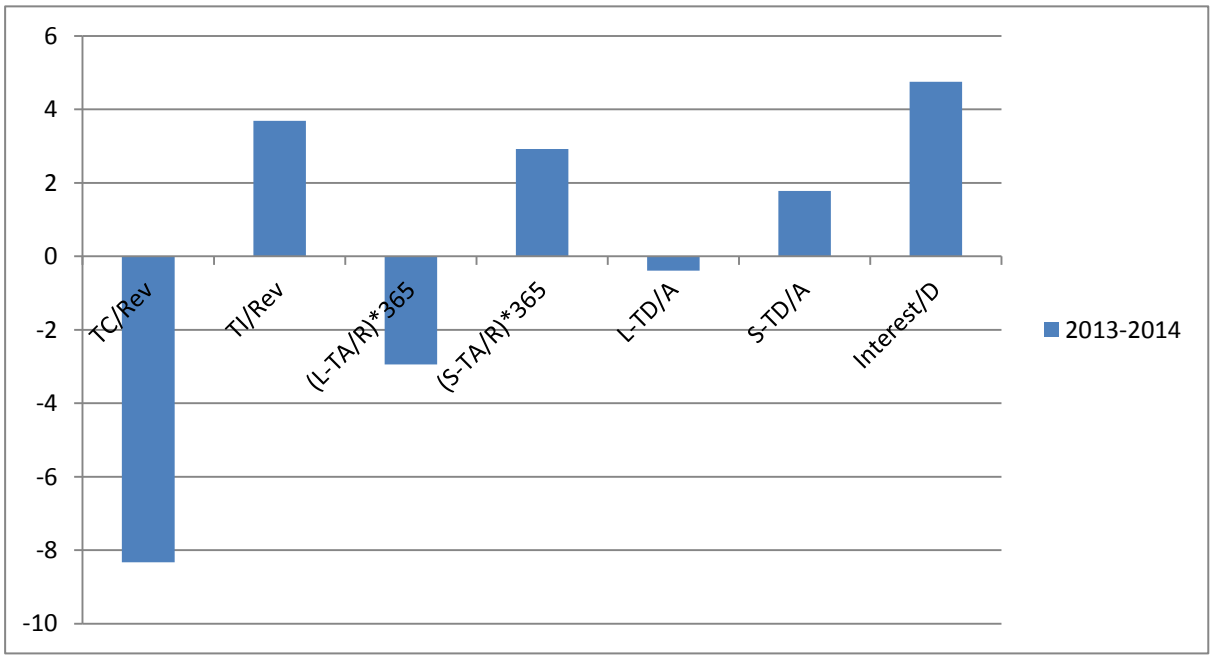
	Influence	Order	Influence(+,-)
TC/Rev	-8.3285	1	-
TI/Rev	3.6870	3	+
(L-TA/Rev)·365	-2.9483	4	-
(S-TA/Rev)·365	2.9186	5	+
L-TD/A	-0.3954	7	-
S-TD/A	1.7786	6	+
Interest/D	4.7520	2	+
$\sum$ sum	1.4640		

From Table4.10, we know that the value of interest coverage increases by 1.4640. Through pyramidal decomposition, we find that this change is caused by these components ratios. They are TC/Rev, TI/Rev, (L-TA/Rev)·365, (S-TA/Rev)·365, L-TD/A, S-TD/A, Interest/D. It is

clear to see that TC/Rev has the strongest influence on interest coverage. The contribution to change of interest coverage is negative 8.3285. The second one is Interest/D. The contribution to change of interest coverage is positive 4.7520. The third one also exerts a positive influence on interest coverage. It is TI/Rev which has an influence of positive 3.6870.

We find that positive factors and negative factors have even influences on basic ratio--interest coverage. Due to the offset of two opposite effects, change of basic ratio is not too much.

Figure4.5 Diagram analyses of influences (2013-2014)



From Figure4.5, we know that the value of interest coverage increases by 1.4640. Through pyramidal decomposition, we find that this change is caused by these components ratios. They are TC/Rev, TI/Rev, (L-TA/Rev)·365, (S-TA/Rev)·365, L-TD/A, S-TD/A, Interest/D. It is clear to see that TC/Rev has the strongest influence on interest coverage. The contribution to change of interest coverage is negative 8.3285. The second one is Interest/D. The contribution to change of interest coverage is positive 4.7520. The third one also exerts a positive influence on interest coverage. It is TI/Rev which has an influence of positive 3.6870.

From Table4.10, we can find that positive factors and negative factors have even influences on basic ratio--interest coverage. Due to the offset of two opposite effects, change of basic ratio is not too much.

Through above analysis, we can get a conclusion. If company wants to increase interest

coverage and strength their solvency ability. It should improve those component ratios with positive effects on basic ratio and should lower those component ratios with negative effects on basic ratio. For example, SAIC Motor should lower the value of TC/Rev and raise the value of TI/Rev. Meanwhile, they also need to lower the value of (L-TA/Rev)·365, (S-TA/Rev)·365, L-TD/A, S-TD/A and Interest/D.

For further analysis, we find the items which have influences on top three component ratios to explore deeper reasons for the change of basic ratio.

Table4.11 Items which have influences on component ratio---TC/Rev

	Influence	Order	Influence(+,-)
Primary operation/Revenue	-4.0225	1	-
Selling expenses/Revenue	-2.0714	2	-
Other operation/Revenue	-1.8576	3	-

In Table4.11, we find that changes in TC/Rev are mainly caused by three further items. They are Primary operation/Revenue, Selling expenses/Revenue and Other operation/Rev.

Table4.12 Items which have influences on component ratio---TI/Rev

	Influence	Order	Influence(+,-)
Other operation/Revenue	2.0568	1	+
Non-operating income/Revenue	1.4147	2	+
Interest income(Financial Co)/Revenue	0.7734	3	+

In Table4.12, we find that changes in TI/Rev are mainly caused by three further items. They are Other operation/Rev, Non-operation/Rev and Interest income (Financial Co)/Rev.

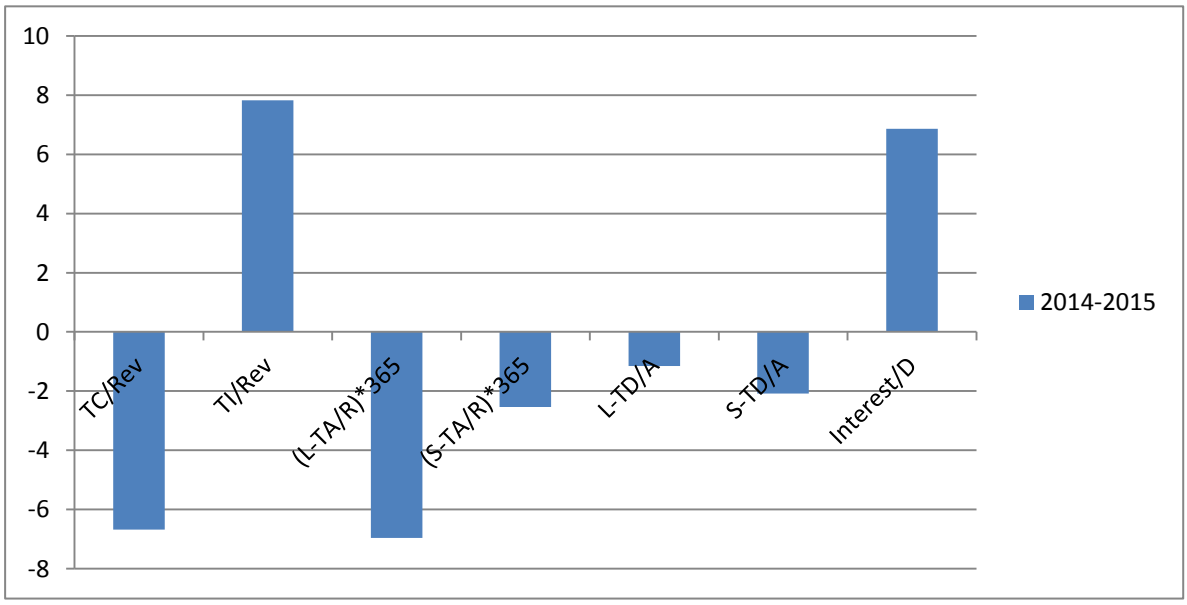
The results of every component ratios' influence on interest coverage during period 2014-2015 are shown in Table4.13 and Figure4.6

Table4.13 Pyramidal decomposition of interest coverage during 2014-2015

	Influence	Order	Influence(+,-)
TC/Rev	-6.6737	4	-
TI/Rev	7.8263	1	+
(L-TA/Rev)·365	-6.9570	2	-
(S-TA/Rev)·365	-2.5388	5	-
L-TD/A	-1.1493	7	-
S-TD/A	-2.0849	6	-
Interest/D	6.8638	3	+
$\sum$ sum	-4.7136		

From Table4.13, we know that the value of interest coverage drops by 4.7136. Through pyramidal decomposition, we find that this change is caused by these components ratios. They are TC/Rev, TI/Rev, (L-TA/Rev)·365, (S-TA/Rev)·365, L-TD/A, S-TD/A, Interest/D. The figure shows TI/Rev that has the strongest influence on interest coverage. The contribution to change of interest coverage is positive 7.8263. The second one is (L-TA/Rev)·365 which has a negative effect. The influence is negative6.9570. The third one again has positive effect. The influence is 6.8638. However, the last one is a negative factor which has almost the same effect with third factor. The influence is 6.6737.

Figure4.6 Diagram analyses of influences (2014-2015)



From Figure4.6, there are two positive factors and two negative factors in the top four factors and they offset each other. The other three component ratios are all negative factors. Therefore, Component ratios exert negative influences on the basic ratio. SAIC Motor should focus on component ratios and do some adjustments to improve solvency ability.

For further analysis, we find the items which have influences on top three component ratios to explore deeper reasons for the change of basic ratio. It should be explained that Interest/D has no further items.

Table4.14 Items which have influences on component ratio---TI/Rev

	Influence	Order	Influence(+,-)
Interest income(Financial Co)/Revenue	6.9679	1	+
Fee and commission income/Revenue	0.9629	2	+
Gain (loss) from changes in fair values/Revenue	-0.4307	3	-

In Table4.14, we find that changes in TI/Rev are mainly caused by three further items. They are Interest income (Financial Co)/Rev, Fee and commission income/Rev and Gain (loss) from changes in fair values/Rev.

Table4.15 Items which have influences on component ratio--- (L-TA/Rev)·365

	Influence	Order	Influence(+,-)
Financial assets(sale)/Rev·365	-3.4825	1	-
Loans and advances/Rev·365	-3.3028	2	-
Long-term equity investments/Rev·365	1.0179	3	+

In Table4.15, we find that changes in (L-TA/Rev)·365 are mainly caused by three further items. They are Financial assets (sale)/Rev·365, Loans and advances/Rev·365 and Long-term equity investments/Rev·365.

In the end, we will sum up all the absolute values of influences for each component ratios and calculate respective weights in the total change. In this way, we can find the influence order and give an overall evaluation if we stand on the perspective of whole period. The results of every component ratios' influence on interest coverage during period 2011-2015 are shown in Table4.16

Table4.16 Pyramidal decomposition of interest coverage during 2011-2015

	11-12	12-13	13-14	14-15	Sum	Percentage in total	Order
TC/Rev	10.5934	13.5503	8.3285	6.6737	39.1459	30.067%	1
TI/Rev	3.0868	6.7856	3.6870	7.8263	21.3857	16.426%	3
(L-TA/R)·365	1.9291	1.2011	2.9483	6.9570	13.0355	10.012%	4
(S-TA/R)·365	3.3663	1.1125	2.9186	2.5388	9.9362	7.632%	5
L-TD/A	2.2222	1.5163	0.3954	1.1493	5.2832	4.058%	7
S-TD/A	1.7107	0.4764	1.7786	2.0849	6.0506	4.647%	6
Interest/D	4.9546	18.7866	4.7520	6.8638	35.357	27.157%	2
$\sum$ sum					130.1941		

From above figure, we can clearly see each component ratio's influence on the basic ratio. Here, we ignore positive or negative effects and only concern about degree of impacts based on the whole period. As we can find that TC/Rev has the greatest impact on interest coverage. And the second is Interest/D. The following one is TI/Rev.

Through pyramidal decomposition analysis, we want to recommend that SAIC Motor should pay attention to these component ratios which have relatively large influences on the interest coverage and do some changes to get an ideal value.

5. Conclusion

With more and more intense market competition, many enterprises choose to expand production by debt financing. In this situation, a new noun—solvency appears. Solvency measures whether an enterprise has ability to repay its debts and examine ability to continue operating and know the risks they may face. Therefore, solvency ability has become an important measure when both creditors and investors evaluate an enterprise. So the theme of this thesis is very valuable and need our further research. In this chapter, firstly, we describe what we do in this thesis. Secondly, we conclude analysis results, especially the solvency ability of selected company. In the end, we want to show some enlightenment got from the writing process of thesis.

In this thesis, we firstly introduce various methods in theoretical part to give a basis for subsequent practical analysis of selected company. They are common-size analysis, financial ratio analysis and decomposition analysis. Then we start to analyze our selected company-SACI Motor using methods introduced in theoretical part. At the beginning, we briefly describe the outlook of SAIC Motor and use common-size analysis and financial ratio analysis to analyze the basic financial condition of the company. Next, we focus on the solvency ability analysis. Through solvency ratio analysis and pyramidal decomposition analysis, we get to know the debt condition and which factors influence the solvency of SAIC Motor.

It is necessary to analyze fundamental financial position of a company. So, we describe some financial findings about SAIC Motor. Firstly, almost all the items in balance sheet and continuous increasing revenue means that SAIC Motor is in a rapid expanding and developing stage during period 2011-2015. Secondly, we must acknowledge that the depression in 2012 also give a negative effect to SAIC Motor. Thirdly, although the revenue has an upward trend, we notice that the profitability ability become weaker during this period. In this situation, we recommend that the company can control costs and cut down expenses. Fourthly, by analyzing structure of assets and liquidity ratios, we find that that around 70% of assets are made up with current assets and the liquidity ratios also are in very preferable values. All of these mean that SAIC Motor has strong liquidity ability. Fifthly, the operation ability of SAIC

Motor is also very strong. To sum up, as a leader in car industry, SAIC Motor behaves very well during this period and is worthy investing.

The core of the thesis is to evaluate SAIC Motor' solvency and get a comprehensive report about solvency behavior of the company. Here, we will summarize the results which come from financial ratio analysis and pyramidal decomposition analysis.

The first method is financial ratio analysis. We assess solvency behavior of company based on three ratios. They are debt to asset ratio, debt to equity ratio and interest coverage. And we find that the values of these ratios have no problem and even approach to recommended values. This means that SAIC Motor' solvency ability is strong. Although in the analysis process, we see some fluctuations of ratios. We should know that any enterprise will be affected by macro environments. And during period 2011-2012, whole car industry experience depression and boom. So we can understand these reasonable fluctuations.

The second method is pyramidal decomposition analysis. We choose interest coverage as a basic ratio and then we decompose it into many component ratios. By observing influences of these component ratios, we are able to know which factors have great impacts and which factors are not so important. For SAIC Motor, they need to pay attention on these factors: TC/Rev, Interest/D and TI/Rev and to increase or decrease these factors to get ideal interest coverage.

At last, some feelings and experiences should be mentioned. Firstly, we should remember that macro environment will affect microeconomics such as enterprises. So when we analyze behavior of a selected enterprise, we must combine it with correspondent macro environment like industry, even country. Secondly, we find that profitability, solvency and liquidity affect each other. So we can't analyze any separately. Meanwhile, we should know clearly their logic relationships. Only in this way, we can find the real reason that causes increase or decrease on this ratios.

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List of Abbreviations

A	Asset
ACP	Average collection period
D	Debt
EBIT	Earnings before interest and tax
EBT	Earnings before tax
EAT	Net profit
E	Shareholders' equity
IT	Inventory turnover
L-TA	Long-term assets
L	Liability
NPM	Net profit margin
ROA	Return on assets
ROE	Return on equity
Rev	Revenue
S-TA	Short-term assets
TI	Total income
TC	Total cost
TAT	Total assets turnover

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Anni Li 李安妮

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Student's name and surname

List of Annexes

Annex1: Consolidated Balance sheet of SAIC Motor (Unit: CNY)

Item	2011	2012	2013	2014	2015
Current assets	191,232,961,545.85	189,154,655,248.98	232,184,468,023.81	237,042,542,265.71	269,930,697,254.04
Cash and bank balances	72,158,565,902.59	60,846,425,921.76	89,097,639,504.38	87,948,624,133.99	72,672,666,192.62
Held-for-trading financial assets	759,037,792.49	42,839,755.99	17,906,491.20	179,263,543.85	1,221,103,619.65
Notes receivable	40,149,264,950.36	24,942,718,373.67	29,238,845,252.60	31,144,243,041.67	36,273,968,771.39
Accounts receivable	11,970,414,523.06	15,427,853,242.07	19,244,289,149.61	20,696,097,314.82	29,332,370,952.75
Prepayments	12,747,982,507.24	19,977,601,440.37	32,046,375,065.44	21,298,374,862.24	13,388,651,691.99
Interest receivable	50,477,438.92	52,097,207.50	234,450,263.71	222,437,332.51	382,043,515.93
Dividends receivable	284,205,442.47	5,986,377,249.15	817,638,611.35	1,185,280,168.70	1,597,857,015.27
Other receivables	1,312,578,894.68	3,903,358,709.34	2,493,966,488.51	2,729,970,912.83	5,080,900,116.77
Financial assets purchased under resell agreements	/	/	146,040,000.00	/	/
Inventories	29,256,881,018.66	24,950,803,086.15	30,914,532,082.83	38,765,888,491.75	37,243,441,948.98
Assets classified as held for sale	/	/	/	34,684,325.47	27,459,029.83
Non-current assets due within one year	4,769,633,200.78	7,479,430,263.52	13,181,502,475.24	15,793,373,034.24	29,213,526,240.21
Other current assets	17,773,919,874.60	25,545,149,999.46	14,751,282,638.94	17,044,305,103.64	43,496,708,158.65
Non-current asset	127,400,219,449.22	128,048,343,719.13	141,456,272,778.13	177,828,131,216.14	241,699,993,585.17
Loans and advances	4,991,064,063.15	6,596,774,236.12	8,585,851,095.28	8,574,071,474.85	34,676,090,843.68
Financial assets	13,971,073,896.98	20,907,581,748.67	14,068,415,778.01	36,448,127,149.53	65,495,009,648.25
Long-term receivables	1,493,933,041.71	1,237,939,132.17	1,316,182,094.25	1,347,201,401.01	801,879,818.41
Long-term equity	31,253,326,919.56	45,483,194,021.66	56,543,030,177.61	63,389,634,195.51	59,019,671,405.86

investments					
Investment properties	2,917,637,809.76	2,873,077,080.29	2,982,690,192.04	2,884,580,134.77	2,684,961,353.45
Fixed assets	36,691,546,772.91	24,792,105,841.46	27,515,791,339.38	31,709,006,820.92	38,690,585,922.68
Construction in progress	8,829,598,188.54	8,033,818,659.57	10,614,731,816.73	10,702,857,557.18	11,856,268,860.79
Intangible assets	8,192,067,057.29	5,526,670,004.45	5,625,725,268.74	6,477,803,607.25	8,360,918,797.39
Development expenditure	591,746,656.39	649,652,334.95	40,916,902.32	8,434,650.99	4,298,394.04
Goodwill	610,981,577.53	84,993,655.59	84,993,655.59	82,304,137.64	463,459,170.13
Long-term prepaid expenses	868,650,265.74	856,057,596.78	880,204,499.49	1,033,544,543.95	1,286,897,910.97
Deferred tax assets	8,231,601,934.06	8,626,461,184.40	11,692,712,759.09	13,757,825,810.37	16,991,606,228.73
Other non-current assets	8,756,991,265.60	2,380,018,223.02	1,505,027,199.60	1,412,739,732.17	1,368,345,230.79
Current liability	162,512,802,241.57	156,351,680,391.01	186,339,668,521.53	199,931,510,830.53	257,667,822,183.89
Short-term borrowings	5,859,252,494.44	5,798,812,190.73	5,251,574,760.18	5,505,253,039.46	4,908,346,545.97
Deposits	18,424,507,736.80	31,808,381,587.96	42,771,754,977.17	44,758,063,908.24	44,384,484,259.05
Taking from banks and other financial institutions	3,000,000,000.00	/	/	/	23,429,657,800.31
Held-for-treading financial liabilities	4,263,656.99	/	7,155,000.00	/	7,486,291.00
Notes payable	5,024,404,818.28	3,083,732,165.14	4,393,002,801.01	5,574,215,320.69	7,282,802,230.82
Accounts payable	73,210,344,869.39	47,809,876,107.19	61,076,035,671.86	66,027,244,570.41	99,034,578,618.58
Receipts in advance	17,683,150,343.49	21,911,629,511.49	27,031,992,611.61	27,430,862,400.76	18,317,063,798.28
Financial assets sold under repurchase agreements	1,164,995,527.20	/	/	/	/

Employee benefits payable	5,055,127,687.75	4,437,867,936.97	5,937,970,517.14	7,107,347,694.73	8,406,294,056.51
Taxes payable	2,826,063,790.18	4,915,632,578.72	3,409,416,661.83	3,410,400,465.00	7,391,537,440.61
Interest payable	77,265,024.10	105,525,826.50	180,345,203.80	152,481,488.16	230,220,570.51
Dividends payable	6,247,188,138.59	1,098,745,971.80	65,411,503.89	137,519,670.03	448,541,726.94
Other payables	17,596,663,320.76	22,742,269,601.58	28,661,920,266.78	32,830,291,360.05	38,646,826,463.17
Non-current liabilities due within one year	5,690,380,898.61	12,142,257,516.08	5,978,410,643.79	6,843,788,125.87	4,974,248,176.38
Other current liabilities	649,193,934.99	496,949,396.85	1,574,677,902.47	154,042,787.13	205,734,205.76
Non-current liability	23,004,061,912.76	15,844,962,026.51	25,568,981,169.37	29,940,085,636.41	43,045,582,935.11
Long-term borrowings	1,863,486,345.64	946,778,928.20	2,430,221,291.15	2,049,144,366.45	1,398,811,144.23
Bonds payable	5,767,289,001.11	/	3,833,983,000.00	2,700,490,000.00	8,208,109,400.04
Long-term payables	34,714,909.22	/	/	/	12,010,354.00
Long-term employee benefits payable	/	/	/	5,516,722,123.55	6,018,478,333.05
Provisions	4,018,687,590.91	3,853,733,529.56	5,296,078,871.23	7,685,580,005.22	9,869,134,713.81
Deferred income	/	/	/	8,701,834,935.13	13,803,658,069.28
Deferred tax liabilities	1,072,456,595.13	1,039,134,454.17	970,554,280.97	2,189,275,882.82	2,833,255,427.98
Special payables	2,495,841,706.90	2,649,951,663.82	2,081,571,199.17	1,097,038,323.24	902,125,492.72
Other non-current liabilities	7,751,585,763.85	7,355,363,450.76	10,956,572,526.85	/	/
Shareholders' equity	133,116,316,840.74	145,006,356,550.59	161,732,091,111.04	184,999,077,014.91	210,917,285,720.21

Annex2: Consolidated Income statement of SAIC Motor (Unit: CNY)

Notice	Item	2011	2012	2013	2014	2015
	Total operating income	434,803,949,080.55	480,979,671,654.73	565,807,011,579.82	630,001,164,437.70	670,448,223,139.34
	Primary operation	426,377,836,870.74	470,394,347,987.34	555,145,042,181.45	616,091,866,780.01	650,377,398,413.60
	Other operation	6,717,647,403.20	8,038,228,355.49	8,200,630,184.33	10,620,527,706.85	10,996,531,379.05
	Interest income	1,659,646,963.42	2,495,862,499.96	2,364,124,238.21	3,195,091,850.17	8,295,161,232.11
	Fee and commission income	48,817,843.19	51,232,811.94	97,214,975.83	93,678,100.67	779,132,114.58
	Total operating costs	406,246,596,344.05	457,087,696,760.50	551,085,469,067.32	617,521,824,046.13	656,253,568,393.27
	primary operation	346,583,579,368.71	394,129,823,572.43	484,458,273,004.0	540,616,517,511.13	576,705,258,472.85
	other operation	5,286,720,821.63	6,433,773,121.15	6,530,209,072.1	8,619,508,402.87	9,127,624,743.41
	Interest expenses	308,857,110.78	610,656,797.24	716,512,659.62	899,418,199.38	2,347,899,980.15
	Fee and commission expenses	10,287,121.53	13,810,913.47	6,580,329.31	11,047,439.01	44,605,113.33
	Business taxes and levies	11,054,303,145.06	7,975,383,838.31	3,439,459,975.60	3,757,210,874.15	5,598,402,254.42
	Selling expenses	22,850,791,963.07	27,208,155,102.99	34,730,501,074.47	40,073,775,337.67	35,537,515,509.27
	Administrative expenses	19,115,699,860.52	18,534,638,524.17	18,344,614,751.99	19,308,705,072.27	24,275,281,948.48
	Financial expenses	42,775,595.66	-115,219,782.30	-254,715,398.50	-164,598,681.79	-231,192,097.17
Including:	**Interest**	758,034,389.66	769,121,620.49	665,714,797.25	669,182,235.38	775,397,924.90
	Impairment losses on assets	993,581,357.09	2,296,674,673.04	3,114,033,598.76	4,400,239,891.44	2,848,172,468.53
Add:	Gain (loss) from changes in fair values	-325,823,779.35	7,141,334.76	-3,215,178.20	17,727,642.36	-285,516,870.56
	Investment income	13,451,965,891.04	15,429,341,204.19	25,456,416,827.35	27,834,668,696.05	29,663,134,420.97
	Foreign exchange gains	13,994,783.99	11,132,345.15	4,370,693.79	2,031,776.32	15,758,109.29
	Operating profits	41,697,489,632.18	39,339,589,778.33	40,179,114,855.44	40,333,768,506.30	43,588,030,405.77

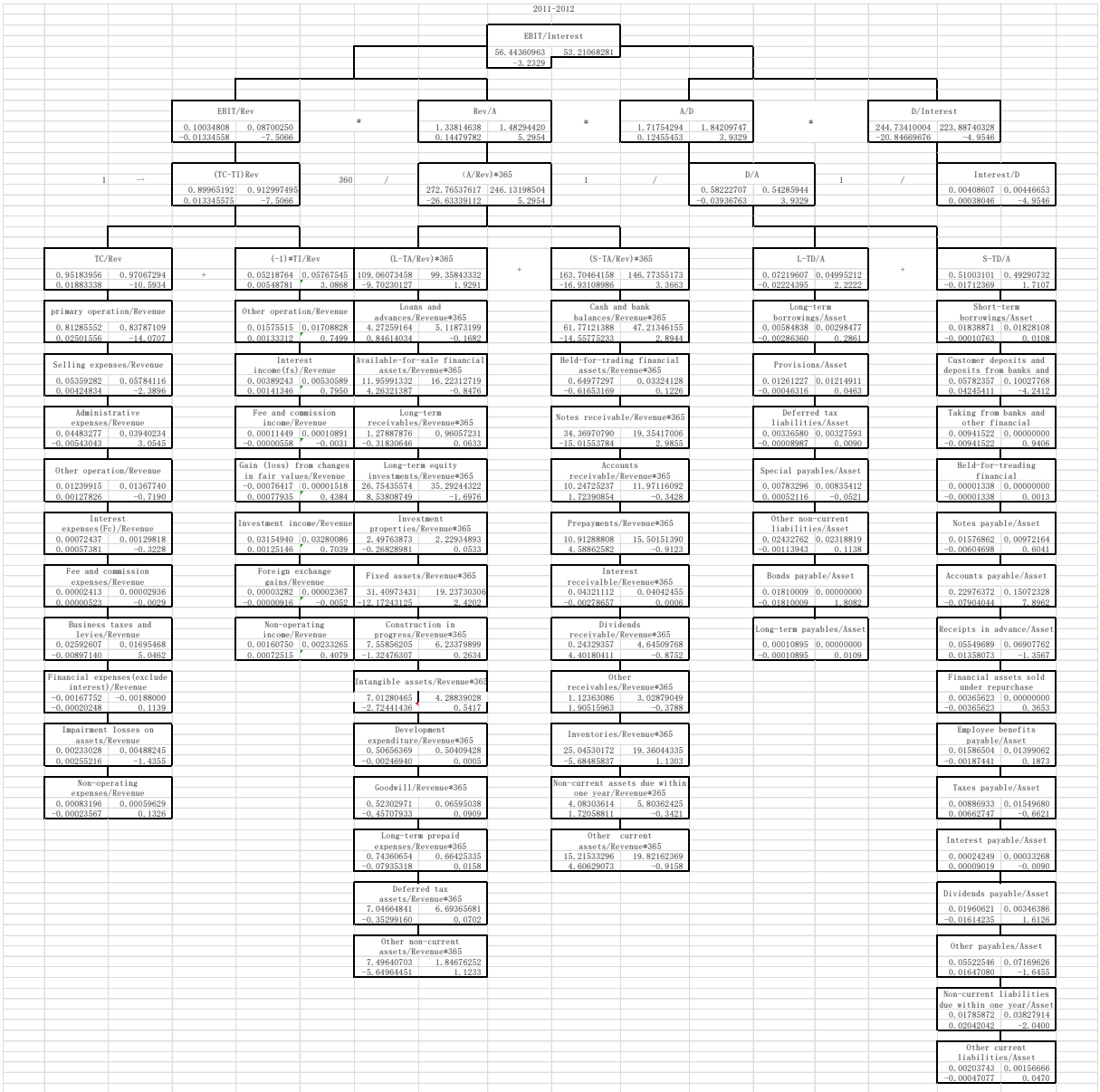
Add:	**Non-operating income**	685,402,805.63	1,097,265,859.02	2,057,949,943.93	3,329,082,332.66	3,666,663,216.93
Less:	**Non-operating expenses**	354,729,650.92	280,490,666.16	744,067,121.89	974,055,646.12	1,445,017,136.44
	Total profits	42,028,162,786.89	40,156,364,971.19	41,492,997,677.48	42,688,795,192.84	45,809,676,486.26
Less:	**Income tax expenses**	7,038,531,753.70	6,628,111,243.43	5,909,056,164.95	4,438,022,170.80	5,735,707,263.02
	Net profit	34,989,631,033.19	33,528,253,727.76	35,583,941,512.53	38,250,773,022.04	40,073,969,233.24
	Net profit attributable to shareholders of the Company	20,221,866,457.55	20,751,763,307.97	24,803,626,272.23	27,973,441,274.41	29,793,790,723.65
	Profit or loss attributable to minority interests	14,767,764,575.64	12,776,490,419.79	10,780,315,240.30	10,277,331,747.63	10,280,178,499.59
	Earnings per share:					
	(I) Basic earnings per share	1.834	1.882	2.25	2.537	2.702
	(II) Diluted earnings per share	No applicable	Not applicable	Not applicable	Not applicable	Not applicable
	Other comprehensive income(loss)	-2,622,769,405.64	2,645,971,370.64	-989,585,379.72	6,065,205,482.27	1,041,372,544,12
	Total comprehensive income	32,366,861,627.55	36,174,225,098.40	34,594,356,132.81	44,315,978,504.31	41,115,341,767.36
	Total comprehensive income attributable to shareholders of the Company	17,714,185,460.26	23,194,619,326.18	23,891,726,223.95	33,254,310,780.25	31,007,088,535.72
	Total comprehensive	14,652,676,167.29	12,979,605,772.22	10,702,629,908.86	11,061,667,724.06	10,108,253,231.64

	income attributable to minority interests					

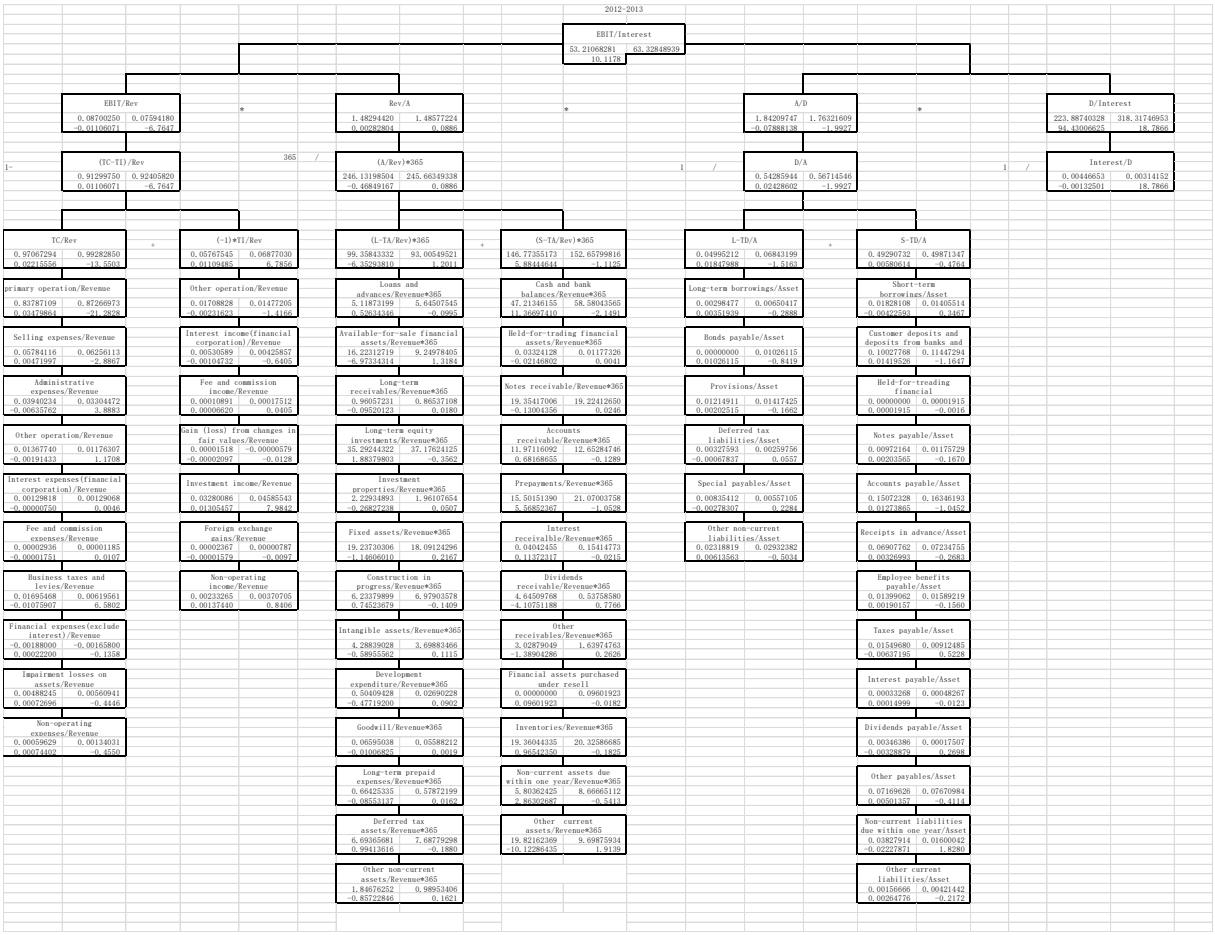
Annex3: Improved Consolidated Income statement of SAIC Motor (Unit: CNY)

Item	2011	2012	2013	2014	2015
Revenue	426,377,836,870.74	470,394,347,987.34	555,145,042,181.45	616,091,866,780.01	650,377,398,413.60
Cost	346,583,579,368.71	394,129,823,572.43	484,458,273,003.97	540,616,517,511.13	576,705,258,472.85
Gross profit	79,794,257,502.03	76,264,524,414.91	70,686,769,177.48	75,475,349,268.88	73,672,139,940.75
Expenses:	59,259,712,236.60	62,469,242,233.74	66,705,548,387.99	77,210,179,945.74	80,217,929,131.96
Selling expenses	22,850,791,963.07	27,208,155,102.99	34,730,501,074.47	40,073,775,337.67	35,537,515,509.27
Administrative expenses	19,115,699,860.52	18,534,638,524.17	18,344,614,751.99	19,308,705,072.27	24,275,281,948.48
Other expenses	17,293,220,413.01	16,726,448,606.58	13,630,432,561.53	17,827,699,535.80	20,405,131,674.21
other operation	5,286,720,821.63	6,433,773,121.15	6,530,209,072.10	8,619,508,402.87	9,127,624,743.41
Interest expenses(financial corporation)	308,857,110.78	610,656,797.24	716,512,659.62	899,418,199.38	2,347,899,980.15
Fee and commission expenses	10,287,121.53	13,810,913.47	6,580,329.31	11,047,439.01	44,605,113.33
Business taxes and levies	11,054,303,145.06	7,975,383,838.31	3,439,459,975.60	3,757,210,874.15	5,598,402,254.42
Financial expenses(exclude interest)	-715,258,794.00	-884,341,402.79	-920,430,195.75	-833,780,917.17	-1,006,590,022.07
Impairment losses on assets	993,581,357.09	2,296,674,673.04	3,114,033,598.76	4,400,239,891.44	2,848,172,468.53
Non-operating expenses	354,729,650.92	280,490,666.16	744,067,121.89	974,055,646.12	1,445,017,136.44
Income:	22,251,651,911.12	27,130,204,410.51	38,177,491,685.24	45,092,808,105.08	53,130,863,602.37
other operation	6,717,647,403.20	8,038,228,355.49	8,200,630,184.33	10,620,527,706.85	10,996,531,379.05
Interest income(financial corporation)	1,659,646,963.42	2,495,862,499.96	2,364,124,238.21	3,195,091,850.17	8,295,161,232.11
Fee and commission income	48,817,843.19	51,232,811.94	97,214,975.83	93,678,100.67	779,132,114.58
Gain (loss) from changes in fair values	-325,823,779.35	7,141,334.76	-3,215,178.20	17,727,642.36	-285,516,870.56
Investment income	13,451,965,891.04	15,429,341,204.19	25,456,416,827.35	27,834,668,696.05	29,663,134,420.97
Foreign exchange gains	13,994,783.99	11,132,345.15	4,370,693.79	2,031,776.32	15,758,109.29
Non-operating income	685,402,805.63	1,097,265,859.02	2,057,949,943.93	3,329,082,332.66	3,666,663,216.93
EBIT	42,786,197,176.55	40,925,486,591.68	42,158,712,474.73	43,357,977,428.22	46,585,074,411.16
Interest expenses	758,034,389.66	769,121,620.49	665,714,797.25	669,182,235.38	775,397,924.90
EBT	42,028,162,786.89	40,156,364,971.19	41,492,997,677.48	42,688,795,192.84	45,809,676,486.26
Income tax expenses	7,038,531,753.70	6,628,111,243.43	5,909,056,164.95	4,438,022,170.80	5,735,707,263.02
Net profit	34,989,631,033.19	33,528,253,727.76	35,583,941,512.53	38,250,773,022.04	40,073,969,223.24

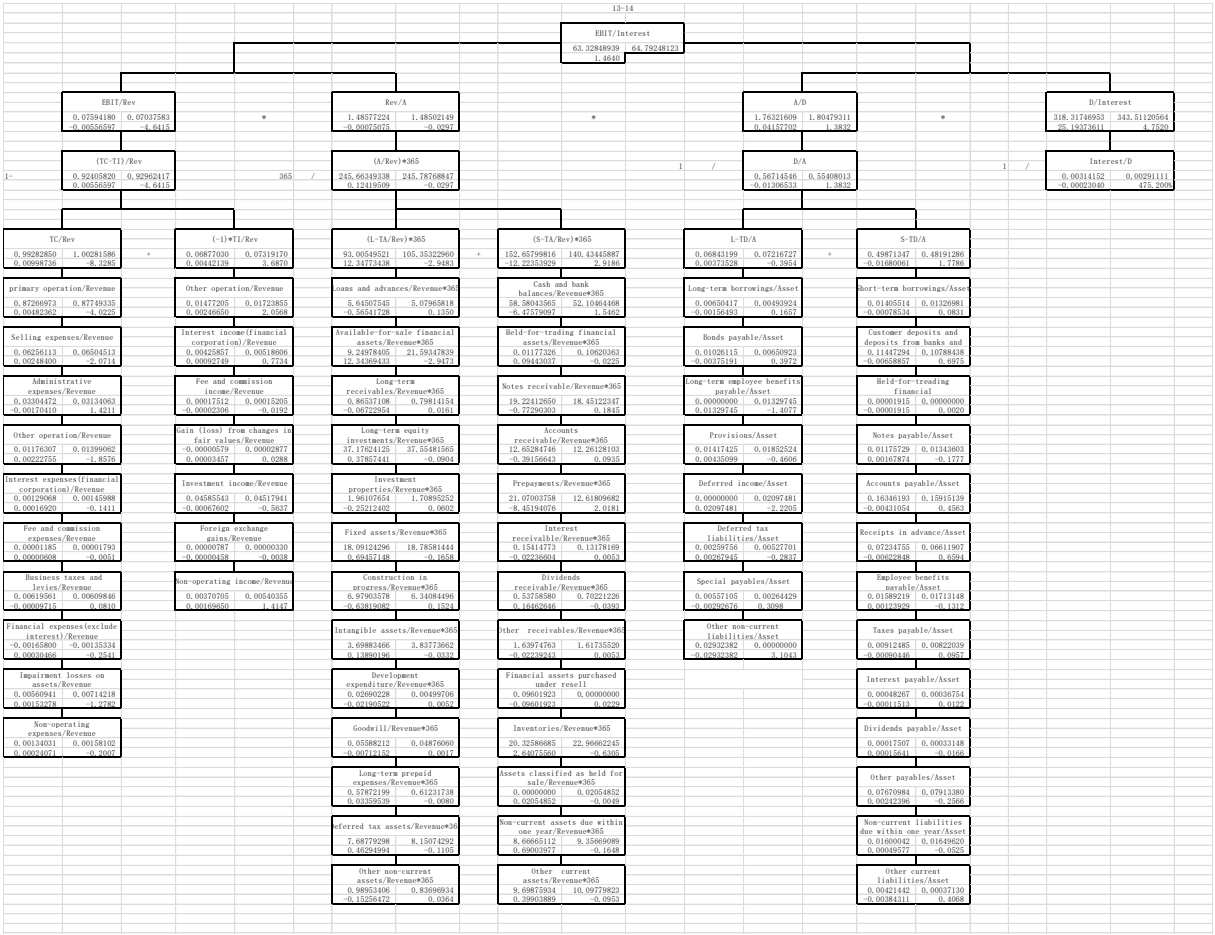
Annex4: Pyramidal decomposition of Solvency during period 2011-2012



Annex5: Pyramidal decomposition of Solvency during period 2012-2013



Annex6: Pyramidal decomposition of Solvency during period 2013-2014



Annex7: Pyramidal decomposition of Solvency during period 2014-2015